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COMMONWEALTH OF PENNSYLVANIA
FISH COMMISSION

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15179
To Gov. Thornburgh

With sincere best wishes
and prayers for your success —
and with hopes we can provide
wholesome distractions in fishing
"Season"

Delph W. Abele

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JANUARY—1978

PENNSYLVANIA

Angler

the
Keystone State's
Official
FISHING·BOATING
Magazine...

30
Single Copy



SUMMING IT UP



The January issue of the Pennsylvania Angler has traditionally contained the Annual Report for the fiscal year which ended last June. Because of the time needed to summarize and assemble the statistics, and the lead time needed for publication, the printing of the Annual Report is delayed until the end of the calendar year. The natural tendency would be for our readers to suppose that in these comments we are really summarizing our “boasting” and “complaining” for the calendar year which just ended. Such is not the case but we certainly hope that the readers of this publication will take the time to read in detail the contents of that Report because it is the closest most of our stockholders come to really getting an understanding of what a relatively small but complex organization does with their money.

The 1976-77 fiscal year was not a year for sitting back and relaxing. It seems that the speed at which the world turns over must have tripled recently . . . or else we're getting old. We have been more and more involved with activities that somehow seem to be just on the fringe of our purview but yet take so much time. Our involvement with the Mid-Atlantic Fishery Management Council and the time spent in trying to provide input for the implementation of fishery management plans from three miles offshore to 200 miles out will, down the future years, certainly affect Pennsylvanians indirectly; in many ways we look for direct benefits from the protection and intelligent management of anadromous fish. We're involved in long-range planning and interfaces with all of the environmental agencies and organizations, and we don't dare miss any of these because of the possible effects on the resources we have sworn to protect.

We have had some breakthroughs this year inside Pennsylvania which we think are worth writing home about. The fish ladder over the Fairmount Park Dam, in downtown Philadelphia, should be completed next May, enabling anadromous and indigenous fishes to migrate upstream and down. When that's finished, we'll go after the dams upstream.

Our inventory and classification project is showing more and more evidence of water quality improvement and we're going to defend that with everything we have. We're finding young-of-the-year bass in the Monongahela River just off Charleroi — that river was not much more than an open sewer laden with industrial wastes toxic to anything alive just ten years ago! We're even going to stock esocids, members of the pike family, in the Ohio River from Pittsburgh downstream since that water has shown dramatic improvement.

The renovation and updating of our fish cultural stations continues toward our goal of modernizing and making more efficient the production units that are such a vital part of our programs.

So far, so good.

We regret that our attempt to secure a license increase has stalled in the Senate. House Bill 792 passed the House of Representatives handily in October, with a vote of 160-33, but has been stalled in the Senate Committee on Environmental Resources and cannot possibly be considered in time to make the approved increase effective in 1978. This is going to have a serious impact on our activities for 1978 and 1979. We can only hope that the sportsmen who benefit from our programs will continue their support to keep us fiscally sound in the face of continuing inflation and personnel costs.

All in all, it's been a good year and my hat is off to our loyal and dedicated employees as well as the people on the outside who help us in so many ways.

Ralph W. Abele,
Executive Director

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

Published Monthly by the
PENNSYLVANIA FISH COMMISSION
COMMONWEALTH OF PENNSYLVANIA
Milton J. Shapp, Governor

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January, 1978

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ON THE COVERS:

There is little argument about the yellow perch being just about
the tastiest morsel ever to grace the dinner table
and this little gamester provides plenty of action all season.
Photo by Russell Gettig, Staff Photographer

Back Cover: Later on, as ice becomes thicker power augers like
the one being used by Dr. Dale Steventon on Bradys
Lake become a welcome piece of equipment to ice fishermen all
over the Commonwealth. Photo by Tom Fegely

James F. Yoder, Editor

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MIGHT WORK... MAYBE

Couldn't sleep... got up and decided to catch up on my reading: the October Angler. The "Leaky Boots" comments on float stockings and license fee increases started the old gears turning. It is surprising how clearly one thinks at 5:00 a.m. I usually am in bed at this time unless preparing to go hunting or fishing (you may reverse the order if you wish).

Anyway, I have recently begun kayaking and it just hit me that this might be an excellent way to stock certain trout streams. The water is usually high in spring and it is amazing how shallow the water can be for a kayak to pass. If the trout were put in small nets and dropped across the kayak like saddle bags, the kayaker could release a netful at the nice holes along the stream, and meet the truck at the next bridge. (What do you think?) I know there are not many kayakers and that is one of the things I like most about it (no crowds), but I will be the first volunteer.

On the question of license increases: I agree with Dr. Witherspoon 100%. I also ski and I pay \$11.00 a day for that privilege. Maybe the complainers should compare their license fee cost to bowling, golf, etc. I also find and pick up many littered cigarette packs along the stream which may indicate that many of the fishermen are allowing the equivalent price of their fishing or hunting license cost to go up in smoke without considering that cost.

Keep up the good work. I enjoy your magazine and we now receive it in the school library where I teach.

BUD COLE
Northampton

What do I think about kayakers releasing "a netful..."? *With which hand?* Ed.

PLAGUED BY THIEVES!

I am a deaf mute, 68 years old, crazy about fishing. I always use live minnows, size 3" to 6". I catch 20 to 30 minnows for 5 hours of fishing. I riveted my name and address tag on the bucket and hid it in a spring brook... nobody was watching

me. I went home, I returned 3 days later to pick up the minnow bucket and found somebody had been stealing all of the minnows out of the bucket. I blew my temper, wanting to shoot the thieves. I installed a padlock on the bucket—now the thieves stole everything, bucket and 25 minnows all gone! I read "Keeping Minnows," by Kenneth Hassler in the July issue of the Angler and I am thinking of keeping the minnows in a tank in the basement of my home. Which is the best tank: glass, fiberglass, polyethylene foam or galvanized—size 15 to 20 gallons, to keep live minnows in all year? I think it was a mistake to put my name and address tag on the bucket; the thieves will follow me wherever I go fishing for the minnows!

ALLEN SPONSER
Altoona

The "best" tank, Allen, is largely a matter of personal choice and application. If you've got a cool spot to keep it in, you won't need the insulating qualities of a foam tank; if not, this might be a consideration. Metal tanks would seem to be the strongest—should you have to move the tank frequently—glass would undoubtedly be the cheapest to obtain, if you watch the classified ads for a second-hander someone is "unloading" at a fraction of its original price. Ed.

HAPPY ENDING—

When I found my boat missing from its moorings at Colyer Lake last September, I gave it up for lost. Nevertheless, I reported the theft to our local Waterways patrolman, Paul Antolosky, and to the State Police at the Rockview Barracks.

I'm glad to report that the police took the theft very seriously, even though the old boat wasn't worth much. They subsequently called me twice, first to gather a more complete description and then to explain their tracing procedures.

Finally, in the middle of October, Mr. Antolosky called to say that a local fisherman, Nick Lambert of Boalsburg, finding my boat floating on the lake, had taken it home and notified the Commission of its whereabouts. Apparently someone had jimmied the lock, used the boat and then set it adrift.

As for the conscientiousness of the State Police and the thoughtfulness of Messrs. Antolosky and Lambert, I hope these facts speak for themselves.

JOHN SWINTON
State College

BACALAO....

I have been reading the *Angler*, but might have missed this subject. I'm looking for something on salting fish like the Indians and Portuguese do so it ends up like Italian Bacalao—which is codfish.

I don't want brine and smoke methods. It looks like salt and air cure so it is good for a long time. How long in salt—per pound of fish—and what kind of salt?

Maybe Leaky Boots readers could help. The Morton Salt Company could not.

GLENDON L. EVANS
547 S. Muhlenberg St.
Allentown, Pa. 18104

BASSING BUFF—

Having read your July issue of the Pennsylvania Angler, we appreciate the article by Mr. Howard A. Bach. We think an article of this type enlightens the general public to two important points: our B.A.S.S. program which are the "Safety In Our Boats" and "Don't Kill Your Catch."

Again we thank you for carrying the gentleman's article.

CHUCK BEST, President
The Happy Hookers Bass Club
North Irwin

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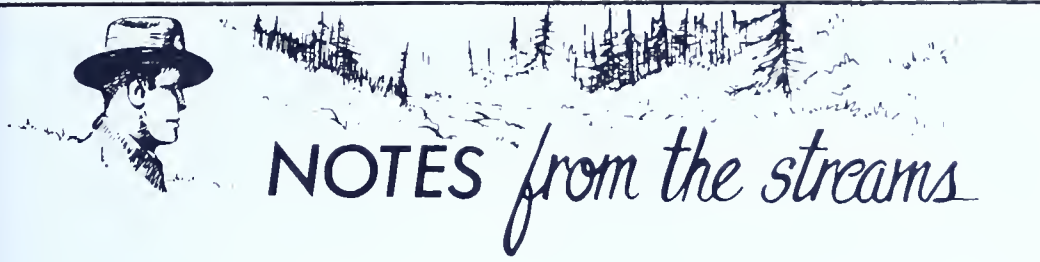
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NOTES *from the streams*

PROOF POSITIVE—

While on a recent patrol and inspection trip along the Fish-For-Fun section of Penns Creek, Supervisor Owens and I were greeted by a “Boy, am I glad to see you!” from a pajama-clad cabin owner.

Inquiring as to why this was so, he informed us that a bear had visited his cabin sometime during the night and he wanted us to “bear” witness to this fact because his friends wouldn’t believe his story.

As part of our service to the sportsmen and public, we most certainly will attest to his tale as being the absolute truth for here on the freshly painted porch were the bear’s tracks and a part of the window sash which bore either claw or fang marks!

Incidentally, the owner and his wife said they were sleeping so soundly that they never heard the marauder, proving that in a spot like Penns Creek one can find complete peace and relaxation.

Frank Kulikosky
Assistant Supervisor
Southcentral Region

WOULD YOU BELIEVE?

While boarding a small runabout on the Allegheny River last Labor Day for possible overloading, Deputy Waterways Patrolman Lavsa told one of its seven passengers about the water in the bilge at the transom. She replied that it was OK as they had been bailing it out all day.

After I checked the registration, I was out to ask to see the PFD’s and check the capacity plate—when the boat sank. We got the people aboard the patrol boat and, with the assistance of another boater, tied lines attached to the bow that was still above water. I towed the boat to the surface and the other boater came alongside and got in the boat with a bucket and bailed it out as I pulled it. I then took it to shore and took the owner down river to his car and trailer, knowing that this is one person who would never overload a boat again. It seems that experience is the best teacher of all.

G. T. Crayton
Waterways Patrolman
N/Allegheny County

ILL-MANNERED POODLE!

While I was on boat patrol last September, a vessel came by pulling a water skier who was not wearing an approved personal flotation device. It turned out that the boat contained a man and his wife, their two sons, and their little poodle. As I pulled the patrol boat alongside to take the information regarding the violation, the poodle jumped from their boat into the patrol boat, ran into the cabin, “watered” the base of one of the seats, ran back out and jumped back into their boat. Now I have heard of people training pets to do their business in the neighbor’s yard, but this is ridiculous!

Don Kingery
Deputy Waterways Patrolman
Allegheny County

GUEST APPEARANCE?

Although we have never heard him play, one of my deputies claims he plays an accordion. Therefore, I cannot attest to his skill as a musician. He threatened my well-being if I mention his name, but I have to tell you what his four year old son Johnny suggested. Johnny said, “I have an idea, Daddy! Why don’t you put on your Fish Commission uniform, take your accordion and go on the Gong Show?”

Don F. Parrish
Waterways Patrolman
Beaver County

SPARSE HACKLE!

Early in the year I was working at the West Penn Sport Show in Pittsburgh, Pa., at which time I was at the booth selling fishing license. An elderly gentleman was filling out his application and asked me if it were alright to put “V.L.” for the color of his hair.

Naturally, I asked him what would “V.L.” stand for. His reply was “very little” . . . he was almost bald!

Robert L. Kish
Waterways Patrolman
Cambria County

HIGH FLYIN’ “FISH”!

Dave Brown from Westfield told me of an experience he had while fishing with his son on Pine Creek at night last year. Dave and his boy went to the creek well before dark and made ready to fish after dark with large night flies. After darkness had fallen, Dave was making a cast on a long hole and just as he thought the fly should be landing on the water he felt quite a tug on the line. He said there was no splashing, but he had something on the line and it was sure acting funny. He kept taking in line and when he retrieved enough to get the hook and leader pretty close to the reel, he found he did not have a fish at all . . . he had a bat!

Raymond Hoover
Waterways Patrolman
Tioga County

LETHAL JOLT—

A late season thunderstorm proved to be hazardous to the health of some muskies that were found lying on the surface of Marsh Creek Lake. Lightning struck the lake several times and after the storm was over six legal-sized dead muskies were floating on the water.

R. A. Bednarchik
Waterways Patrolman
Chester County

NEW MODE!

If you have never heard of a “bikeboat,” you might in the near future—if the inventor of this wonder is successful.

“Bikeboat” might not be the official name of this new approach to transportation on water, but it is appropriate since that name describes it accurately.

Deputy Tom Kamerzel was the first to witness this strange creation as the inventor tried it out on the Lehigh Canal. He pedaled down to the canal on a regular bicycle to which some sort of apparatus was attached on the rear. This “apparatus” turned out to be pontoons which he sat on the water and inserted the bike into so that the bike was floating upright on the water. The inventor then hopped on the bicycle seat and began pedaling. This action turned a small propeller in the rear pontoon which moved the vessel along. When you are through boating, you pack the whole thing together and “pedal” on home.

Fred Mussel
Waterways Patrolman
Lehigh County



Note the extended pectoral fin on this yellow perch which acts like a boat oar.

Taking A Closer Look

by Tom Fegely

aquariums provide the occasional opportunity.

As I sit typing this, I can stare across my desk at a colorful pumpkinseed hanging suspended in my built-in fish tank. His paired pectoral and pelvic fins paddle back and forth to maintain balance while the blue dorsal fin moves in rippling waves. Only when I drop a morsel of earthworm into the water does he move from his corner with a flip of the tail, returning to his territory with equal speed and unwasted motion.

A fish's pectoral fins, besides aiding in the maintenance of balance, also serve a function similar to the bow-planes on a submarine. If tipped downward while the fish is swimming, the fish will dive. If pointed upward, the fish will climb.

The pelvic fins play a similar but probably less important role. Along with the pectorals, they enable a fish to steer and brake. Extended like a boat oar, one at a time, a fish is able to turn and tip in any direction or, folded, maintain a straight course for

maximum speed.

In primitive fishes, like gars and sturgeons, the pelvic fins are located far to the rear of the body. In sculpins, they are oversized and function to help maintain position in swift waters by wedging between stones. In some fishes they are absent entirely.

The beauty of all this is that every fin on a fish's body coordinates with the others to control stops, starts and turns. In a flying bird, the twists and turns and the beauty of a rudder-like tail or twisted wing can be seen through binoculars. Fish seldom provide such close scrutiny but they nevertheless exhibit similar grace and form.

If a speedy smallmouth were to apply the brakes only with its pectoral and pelvic fins, it would quickly find itself topsy turvy. To counter this for other fins are also brought into play. Some fish like muskies, pike and pickerel wouldn't have as much of a "tipping" problem because their pelvics are situated well back on their undersides and can counteract

Too often we view fish merely as something to be battled on the end of a rod or devoured at the supper table. By the time we finally get to take a close look at it, a fish may be lying lifeless in a creel or, if released, is soon gone from our view.

Unlike birds and mammals, few people ever get the chance to be "fishwatchers" except where large



These shiners maintain their positions with a constant movement of their fins.

force of the pectorals.

The dorsal, anal and caudal (tail) fins also play some part in stopping and turning. A tail fin thrust upward can help counteract the over-efficient pectorals.

The prime purpose of the dorsal and anal fins is to keep the fish vertical while swimming—particularly at low speeds. Like riding a bicycle, a slow-moving fish might actually begin to topple without the wheel-like action of these two fins.

In a few unique instances, such as with bowfins and eels, the long dorsal fin moves in graceful “S” waves and actually propels the fish forward.

But the caudal fin is the main locomotion organ. By rapidly whipping it back and forth, a fish can control its speed and some can actually shift into reverse with the tail’s action.

Most anglers would be hard-pressed to accurately estimate the speed at which a fish swims. A trout frightened from beneath an overhanging bank, or a bass spooked from its shoreside lair both seem to move off in tremendous burst of speed.

Actually, scientists have determined that a bass’ top speed is only about 12 miles per hour. Its cruising speed, that which it can maintain for a longer period of time, would naturally be slower.

A brown trout, which swims at about five miles per hour, can accelerate to a faster speed when in pursuit of a minnow or in grabbing a floating fly. Fish which make long migratory journeys, like salmon, can keep up sustained speeds of 7–10 mph and are able to make a short burst at 50 percent faster. A leaping salmon could, therefore, accelerate to 15 mph prior to leaping over a falls.

Scientific experiments show that some fish, including trout and small-mouth bass, secrete a special slime that actually decreases friction and dissolves away as a fish swims at high speeds. Friction and turbulence are thereby reduced as if a fine oil were used.

Fish possess either a “soft” or “hard” dorsal fin (sometimes referred to as *rays*). Trout, salmon, minnows and suckers possess soft rays. Sun-

fish, perch, pike and bass have hard, or stiff rays.

In general, the soft-rayed fish are jumpers and the spiny-rayed fish are not. Of course, as with everything designed by nature, there are exceptions such as the hard-rayed small-mouth which is a renowned leaper.

The force which propels a fish through the surface to grab a fluttering insect or to tail-walk on the end of a line in attempting to throw a hook is the end result of rapid swimming. Just as the fish is about to break water, it adds a final thrust of the tail and shoots upward like an unleashed rocket. Many fish, like pike, which are not natural jumpers, will employ their tricks when hooked and their lives are at stake.

No, not too many of us take note of all these mechanics when fighting a fish nor will the knowledge help to fill our creels. But by understanding the many factors that influence how high a fish can leap or how fast it can attack a plug, we will all come to better understand and respect these creatures which bring us so much joy.



Ice Fishing at Middle Creek

by George E. Dolnack, Jr.
photos by the author

We heard the geese before they came into view. They were headed in and some tumbled freely to quickly lose altitude. Then they saw their wings and glided in for a landing on the water that had been kept ice-free by the movement of other Canadas. Considering that we were standing on seven inches of solid ice and were in the grips of one of our coldest winters, this was no small feat.

Below the ice, another drama was unfolding. A pickerel bored in on a minnow that made a desperate attempt to evade its menacing jaws. As the toothsome predator grabbed the small fish across the back, the flag on the tip-up tripped. Spotting the sign

ice fishermen were having a ball on the day the author visited Middle Creek Lake. Here, Earle Gamble, of Lebanon, displays his mixed catch of bass and chain pickerel.



the angler started toward it, his ice choppers biting into the hard surface as he ran.

When he reached the tip-up, he pulled it gently out of its hole and placed it on the ice. Then he palmed the line and fed it out as the pickerel moved off with its meal.

Soon the line went slack, indicating that the pickerel stopped and was preparing to turn the bait around in its mouth before swallowing it head first. The angler got set, and payed out a little more line as the fish started to test the minnow. Then the fisherman set the hook with a sharp jerk on the line. Shortly, the 18-inch pickerel joined three fat bass that were already on a stringer.

This scene and variations of it was repeated many times at the Middle Creek Wildlife Management Area located on the Lebanon/Lancaster county line just off Route 897 between Kleinfeltersville and

Cocalico. Since its dedication in 1973, Middle Creek has fast become a favorite with southeast anglers.

A good supply of bass, pickerel, crappies and bluegills can be found at Middle Creek. And one need only visit the impoundment during freeze-up to see firsthand how productive it is.

Water depth here averages 3½ feet with a maximum depth of 13 feet. The top bait is minnows fished about 6 inches off the bottom. Lures like white bucktails, yellow bucktails, Rapala ice jigs, and Swedish pimples are also used with good success.

Ask any angler when is the best time to fish Middle Creek and they'll probably say, "When the fish are biting." While there is no set pattern on the lake, some anglers prefer fishing from early morning through noon. Others find the hours between noon and 2 p.m. productive. And I've seen the fish hit from 2 p.m. to 4 p.m. So take your pick and your chances.

A fence divides the lake into two portions. The larger area is reserved for waterfowl propagation and the other, about 35 acres, for public recreation.

Most ice fishermen cut their holes just off the fence line. Once you get a look at the fish they are pulling out here, you'll know why this is a favorite area. But this is not to say that other spots are not productive. In just a few minutes one afternoon, I watched Carl Wolf, of Ephrata, yank three flopping bass onto the ice using yellow bucktail near the breast of the dam.

Year-round angling is available at Middle Creek. Manually propelled boats can be used on the lake from the middle of May thru mid-September. Shoreline fishing is permitted anytime.

For more information, contact Resident Manager, Middle Creek Wildlife Management Area, RD#1, Newmanstown, Pa., 17073.

Winter Crappies

by Fredric Doyle



"There are two kinds of fishermen," said the man, blowing on his bare fingers. "Some sit around all day among a flock of tip-up waiting maybe for a walleye or a northern. Or maybe just sitting. Now, take me, I go for a whole stringer full of half-pounders. Maybe not the heart-pounding action of a lunker flopping up through a hole in the ice; but, for me, a lot of *little actions*: bluegills, perch, crappies."

He sat on a little cross-legged stool, hunched over a hole in the ice. His rod was a three-foot section of an old fly rod fitted with a butt and a reel full of monofilament line. The rod was also tipped with a six-inch length of spring steel. The slightest movement of the rod set the tip quivering. The jig, feathered with a wisp of marabou feather, was suspended six or eight feet below. It fluttered like a grass-skirted Polynesian maiden.

"Mind if I set up here?" I asked, indicating a space a rod or so away from him.

"Free world," he said, "help yourself."

Silently debating the validity of this observation, I looked about . . . there were a number of holes drilled through the ice in this area; many were frozen solid—twenty-nine inches of clear ice! Other holes, recently vacated, were capped with a thin shell of frozen water. Kicking open one of these holes I baited my hook with a live minnow and dropped it into the water. I, too, was blowing on my bare fingers. Having forgotten my minnow bucket seine I had to plunge my hand into the icy water of the bucket to scoop out my bait. After about a half-hour without any action I walked over to the man who was scoring regularly.

"Try these," he said, noting my empty stringer.

"Jigs with wax worms?"

"Yes, here's the secret, jigs with wax worms," he said, handing me several jigs from his tackle box.

"Thanks a lot, but. . ."

"Never mind, keep them. If you want to make some for yourself just get some long shanked hooks, some BB shot and a few strands of marabou feathers. Heat the shanks of the hooks before you bend them so they won't break. The shank must hang horizontally."

All the while the tip of his rod was quivering. He kept blowing on his bare fingers as he changed his rod from hand to hand. Unlike fishing schools I was being instructed by a veteran in the fine art of ice fishing. I had no one breathing down my neck nor a curious crowd of onlookers to cheer or jeer my efforts.

It was cold. The '77 winter was doing its best to clear the lake of anglers. The wind, with a below zero factor, swept across the lake slushing the fishing holes. Occasionally the ice cracked, roared like distant thunder, reverberating and echoing from the surrounding hills.

"And another thing," the man said. "See that stump over there along the shore?"

"The one pointing in our direction?"

"Yes. Well, that was a rock oak tree that slid into the lake. The roots were undercut by the waves and it toppled into the water. The park rangers couldn't drag it out so they cut off the butt and left the top. The branches and twigs makes a hiding place for minnows and crappies . . . safe from the muskies and northerns."

Suddenly he stood up. Raised his short rod above his head and added another crappie to his stringer.

Returning to my stand, and having

no wax worms, I had to depend upon my live minnows. In spite of the man's advice, live minnows had always paid off for me. Bait, I reasoned, is a matter of confidence in the kind of bait that you use.

Other anglers were there, too; some standing amidst their tip-ups, others hunched over, studying the dark depths of the lake through the little round windows where a bobber signalled a nibble. Some anglers, methought, should have been home sitting by a warm hearthstone; but the urge, the ancient angling urge had driven them forth to battle the elements and bring home their share of provender for the tribe. A satisfaction that only a true angler can experience.

Ice fishing is like no other department of angling, and one of the most enjoyable. In spite of the cold, I never have heard of any ice fisherman suffering from hypothermia.

While this angling episode occurred at Shawnee State Park, the basic techniques can be used in any stream or lake. Find a brushy spot, fallen trees, clumps of reeds, or a sharp drop-off from the shore and there you will find crappies. And, there you will find a lot of "*little actions*." While the man with the jigs and wax worms scored much better, I did manage to catch a half-dozen crappies with my live minnows. Also a fourteen-inch yellow catfish.

The early winter twilight began to blur the distant shorelines thus ending one more day of angling to add to the long, long stringer of days of angling to look back upon with quiet satisfaction.

The Annual Report of the Pennsylvania Fish Commission

During the 112th year in the history of the Pennsylvania Fish Commission, the Board met four times: July 12, 1976 in Harrisburg; October 4, 1976 in Erie; January 17, 1977 in Harrisburg; and April 18, 1977 in State College. Under the Administrative Code the Pennsylvania Fish Commission consists of nine competent citizens of the State who shall be appointed by the Governor by and with the advice and consent of two-thirds of all the members of the Senate. Eight members of the Commission shall be persons well informed on the subject of conservation and restoration, and one shall be an experienced boatman to hold office for terms of eight years each and receive no compensation for their services."

The details of our activities for the past fiscal year which follow show another busy year of diverse activities. There are 416 salaried employees and some 100 special waterways patrolmen, plus a small number of temporary summer help to accomplish an amazing number of complex and varied activities. Noticeable in this report is the concentration on updating and renovating our facilities, particularly in the hatchery system and our access areas. While funding from the Project 500 bond issue is still available we make the most use of the nonrecurring funds for the benefit of the fishing and boating public.

The progress on our comprehensive inventory and classification of all the waters of the Commonwealth continues and it is still one of the most promising programs ever undertaken. Sportsmen and those of the general public who are able to take the time to watch these proceedings are amazed at not only the unbelievable variety of species and their numbers, but also the professional abilities of our fisheries management teams.

Our law enforcement officers, by their alertness and constant dedication to the protection of the resources have been Pennsylvania's best defense against degradation of Commonwealth waters in spite of constant threats. Well-meaning, but ill-designed and unsupervised projects called "stream restoration" that repeatedly follow high water have devastated many of our headwater streams in spite of our attempts. But, the cumulative effects would have been much worse without the persistence of the Thin Green Line in preventing this.

We have been pleased to note more progress in our anadromous fish restoration programs with the Fairport Park Dam fish ladder designed and engineered

by our own people now authorized for construction by the City of Philadelphia. Our testimony before the Susquehanna River Basin Commission and the Federal Power Commission, insisting on restoration of natural fish runs in the Susquehanna River and its drainage, we think, is beginning to pay off.

With the enactment of the Fishery Conservation and Management Act of 1976 (200-mile bill) Pennsylvania, by its membership in the Mid-Atlantic Fishery Management Council has taken an equally active part with the other coastal states in developing fishery management plans not only for the marine fish from three miles offshore out to 200 miles, but certainly has exerted its influence in protecting those anadromous species that want to live part of their lives in Pennsylvania waters. Management Council meetings take about one-eighth of the Executive Director's time and the schedule does not look any lighter down the future years.

As the Commission saw the problems of inflation and higher personnel costs affecting our operating balance, we began last fall with a 5% cut in operating expense straight across the board. At the same time we asked the General Assembly for a general license increase of \$1.50 and a juvenile license. At this writing, the juvenile license has been amended from the bill and, in fact, because of the General Assembly's preoccupation with the General Budget, no fishing license bill has been passed and the time is running short. With increasing demand on our fiscal resources, we can ill afford to let a whole year pass without this potentially higher income, but can do little about it without the cooperation of the General Assembly.

Record fish production, record participation by the fishing and boating public, and record sales of fishing licenses and boating registrations all show tremendous support by the public for our programs and activities. The preference surveys conducted last year showed overwhelming support for every one of our programs, and we believe that the public will in turn support our needs for additional revenues to continue these same activities. We look forward optimistically to a future of continued success based on outstanding support and cooperation we have received from the public.

RALPH W. ABELE
Executive Director

Office of Information

Working under the direction of the Executive Director, the Office of Information consists of a director, publications editor, magazine editor, conservation education specialist, staff photographer, exhibits technician and artist, aided by a secretarial-clerical force of six persons. Its primary function is to aid all Commission personnel in keeping the public, particularly fishermen and boaters, informed about fishing and boating opportunities in Pennsylvania. New this year in basic functions has been the start of a public information and education program concerning amphibians and reptiles, especially those that are classified as rare or endangered.

Because of its small size and modest budget, the Office of Information relies heavily on the cooperation of outdoor writers, newspaper and magazine editors, radio and television program directors to inform millions of readers and viewers about fishing and boating in Pennsylvania. Some 75 news releases were issued to these outlets during the year. In addition, the public information staff, field officers and other Commission staff members worked directly with reporters and writers on story assignments to cover Commission programs in fishery management, propagation and law enforcement.

PUBLIC APPEARANCES

As in all efforts to keep the public informed, the information communicated to the general public through the news media is supplemented and, in many ways, made more effective by direct contact between citizens and Commission employees. The major portion of this direct contact is made by the Commission's field officers and hatchery workers. A summary of these activities appear in the reports of the Law Enforcement Division and the Division of Fisheries.

PUBLICATIONS

"When to, how to and where to" questions were answered through various pamphlets, booklets and other publications distributed in response to mail requests, at exhibits and shows and club meetings attended by Commission personnel. Two major books were added to the Commission's list of publications this year. "Techniques of Fly Tying and Trout



Office of Information staff had a major role in coordinating "Expo 77," a Fish Commission-sponsored educational program held in Nanticoke.

Fishing" was written for the Fish Commission by George Harvey, recognized everywhere as a master fly tyer and one of the country's foremost fly-tying instructors. Available at \$1.50, the book guides the novice fly tyer through step-by-step instructions to tying his own flies and then, in its second section, provides instruction on how to fish for trout using the flies he has just learned to tie.

Also new this year is the "Pennsylvania Angler's Cookbook." Compiled from recipes submitted by readers of the *Pennsylvania Angler* magazine, this unique cookbook, which costs \$2.50, contains some 300 different ways to prepare fish. Among those items produced and distributed free of charge in single copies was a new pamphlet, "Pennsylvania's Poisonous Snakes." The natural history and identifying characteristics of the timber rattlesnake, massasauga rattlesnake and copperhead are reviewed.

A wide range of information and educational material is prepared by this office to answer thousands of requests from residents and nonresidents alike, regarding fishing and boating opportunities in the Keystone State.

PUBLIC SERVICE ANNOUNCEMENTS

One 60-second and one 30-second public service television "spots" were produced during the year. Aimed at improving angler relations with landowners and reducing litter — the leading cause of

posted land along rivers, streams and lakes — prints were distributed to 28 television stations across the state.

PENNSYLVANIA ANGLER MAGAZINE

Dealing with fishing and boating in Pennsylvania, exclusively, the magazine reaches more than 50,000 homes each month. Free-lance writers' accounts of successful journeys to Keystone waterways serve as a month-by-month guide to "where to go" for seasonal fishing. Augmenting these stories are technical articles written by staff members of the Division of Fisheries for the enlightenment of Pennsylvania's fishermen; and, for the boater, periodical messages of boating safety appear.

EXHIBITS

Office of Information staff had a major role in coordinating "Expo 77," a major Commission-sponsored education program held in Nanticoke. Free to the public, over 12,000 people viewed the displays and manned information booth during a three-day period.

A major number of the Commission exhibits used at the National Boy Scout Jamboree in Moraine State Park were designed, installed and manned by staff members. Exhibits and other educational aides were supplied to 44 sites in Pennsylvania during the year. These sites included fairs, sports shows, shopping malls and

partment stores.

The staff presented over fifty educational programs to teachers, elementary, secondary and college students, fraternal, civic, park and recreation groups during the year. These included movies, slide talks, fishing and filleting demonstrations.

CONSERVATION & ANGLER AWARDS

Six hundred eighty senior and junior fishing awards were sent to Pennsylvania anglers who creelied trophy fish and 104 "Husky Musky" awards were sent to those who caught muskellunge over forty-

five inches in length. The Commission awarded 372 Conservation Awards to youths who assisted in projects to conserve and improve our aquatic resources. Twenty-six Conservation Service Awards were presented to adults who aided the Commission in its many activities and programs.

MAIL & TELEPHONE

By far the leading demand on time and expense of the Commission's public information staff is required in answering mail and telephone requests for information from legislators, fishermen, boaters

and other citizens interested in the work of the Commission. Sometimes running at a peak of over 60 phone calls per day and more than 100 letters and postcards, the Office of Information handled a total of over 25,000 such requests during the year. Most of these involve selecting, packaging and payment of postage for sending one or more of the Commission's free pamphlets, booklets or other printed material. Many, however, require research and writing of personal letters in trying to serve the needs of legislators, government officials, sportsmen, students, teachers and other citizens living in Pennsylvania and surrounding states.

Bureau of Waterways

GENERAL

The Boating Advisory Board, chaired by Nicholas Apfl, met twice during the year. The Advisory Board is comprised of five knowledgeable boatmen appointed by the Governor. Its function is to advise the Commission on matters regarding boating equipment and operations. During the year the board offered recommendations concerning special regulations in Lake Williams and Lake Redman in York County, Shenango River Lake in Mercer County, and Treasure Lake in Clearfield County. In addition, the board recommended that Regulation 4.10, "Rules of the Road," be amended to prohibit the operation of vessels within 100 feet of water siphons, intake towers, and bridge piers, due to the safety hazard involved to boaters. These recommendations were adopted by the Commission.

1977 marked the first full season of operation for Waterways Patrolmen on the tidal waters of the Delaware River in Philadelphia, Bucks, and Delaware counties. In later 1976 the Commission became the sole state agency enforcing waterways regulations in these areas, having assumed the responsibility from the Delaware River Navigation Commission.

This past summer the city of Johnstown was hit by one of its worst floods in history. Southwest region law enforcement personnel, assisted by a number of their deputies, voluntarily rushed to Johnstown within hours after the flood waters hit the city and its surrounding communities. They participated in rescue operations, established road blocks, patrolled to prevent looting and assisted local authorities in efforts to restore law and order. Division officers remained in the area for over a week to assist in locating victims and to in-

spect and clear debris from the lakes and streams throughout the watershed.

A Civil Service Exam was given during the year to secure qualified applicants for the position of waterways patrolman. 897 applicants took the written exam and over 100 were given oral exams. A certified list of those eligible for employment was established and forwarded to the Commission by the Civil Service Commission. The Commission used this list immediately to fill vacancies in Montgomery and Lebanon Counties.

All supervisors, assistant supervisors, waterways patrolmen and many special waterways patrolmen are now performing their duties in a new uniform as prescribed by the Commission. The new uniform is more distinctive than in the past and is making our officers more "visible" to the public.

Plans were made during the year for the Fish Commission to take over the boating registration functions, in the past held by the Department of Revenue. The two agencies jointly sponsored legislation

transferring the registration function to the Commission with a tentative take-over date set for January 1, 1978.

The Fish Commission's new Walnut Creek Boating Access and mooring basin on Lake Erie became operational this year. The facility contains parking spaces for from 160 to 280 cars and trailers (See report of the Division of Engineering), launching facilities for up to six boats at a time, boarding docks, and for the first time at any Commission facility, overnight mooring docks for 72 boats are available on a per night rental basis. The facility is equipped with a high intensity storm warning light that can be switched on instantly by the National Weather Service at first radar sight of an approaching storm.

Law Enforcement Division

This past year, division personnel continued to maintain an effective fish and boat enforcement program. As in past years, an increase in the number of

The Waterways Patrolman's role in maintaining good landowner relations is often responsible for keeping waters open to the public.



persons apprehended for violating the fish or boat law was recorded. The total number of prosecutions reported for the year (1976 comparative figures in parenthesis) was 7,560 (7278). 4,988 (4862) were for violations of the Fish Law, 2,580 (2416) for boating violations. In addition to prosecutions, 2,808 (3,498) warnings for fish violations and 4,734 (4564) warnings for boating violations were issued. A total of 27,440 (18,192) boats were boarded during the year with 20,126 (12,130) meeting legal requirements.

To keep the public apprised of the latest developments in fishing and boating, Commission policies and other items of interest, field officers continued to carry out an intensive public relations and education program. This included the presentation of boating schools, fishing schools, the manning of displays and exhibits at sport shows, malls and fairs, appearances at sportsmen's clubs, schools, church, scout and civic organizations. The total number of appearances was 2292, with 394 films and slide programs being shown. In-service training with emphasis on the Commission's Public Relations Program was conducted at Lamar. Division personnel continue to provide fishing and boating information to the public via telephone, written correspondence, newspapers, radio and television.

The Law Enforcement Division continued its efforts to preserve water quality and to maintain and improve fish habitat. Through the Commission's stream and lake improvement program, district personnel assisted many sportsmen's clubs, Scout groups, Youth Conservation Corps and others in installing and providing advice for the installation of stream improvement devices. Involvement by sportspersons is on the increase as more concern is being shown for habitat improvement. A number of late improvement projects were also undertaken in an effort to improve habitat for warmwater species. Many groups have shown interest in the Adopt-A-Stream Programs and our officers assisted by directing groups in litter cleanup and other waterway improvement projects.

Efforts to preserve water quality included the investigation of 308 water pollution cases during the reporting period. Many of these incidents involved a considerable amount of time for investigation as they required taking water samples, counting dead fish and other aquatic life destroyed as the result of deleterious substances entering our waterways. Also, the sources of the pollution had to be found so that proper action could be taken against offenders. Most pollution incidents were investigated in cooperation with the Department of Environmental Resources and many prosecutions were made jointly,



Two of these "theaters-on-wheels" provided person-to-person contact with over 32,000 people at state parks, marinas and sporting events.

with some cases referred to DER for corrective action.

Other duties involved the investigation and review of encroachment applications which included pipeline crossings, dam construction, bridge construction, sewer construction and myriad of other projects which may effect Commonwealth waterways. A review was made of 680 deep and strip mine applications, with field officers submitting comments on the effects of mine water drainage on fish and aquatic life.

District officers continue to play an active role in the many programs conducted by the Soil Conservation Service and the Federal Disaster Assistance Administration. These programs involve the removal of undesirable materials deposited in streams after a flood and the stabilization of stream banks to halt further erosion and flood damage. Waterways patrolmen insure that any work done is with minimal damage to fish habitat, fish and aquatic life.

Watercraft Divison

177,000 watercraft were registered in Pennsylvania during 1977, a 4.7% increase over the previous year. Nearly three-

fourths of the boats registered were 16 feet or less in length.

Twelve new patrol craft were purchased for the Commission fleet and five were phased out of service. Six outboard runabouts and a cartopper are now operating on lakes and small impoundments of the state. Two flat-bottomed river boats equipped with outboard jet units will be seeing duty on the Lower Youghioghen and upper Susquehanna Rivers. The Commission's patrol fleet now numbers 14 watercraft.

2,700 capacity plates were issued during the past year, bringing the total number of boaters participating in this program to 28,500.

BOATING SAFETY EDUCATION

The Fish Commission's two mobile boating education vans were again on the road this past season. Two deputy waterways patrolmen were employed full time to operate the vans on special assignments as Information and Education Specialists.

Portable generators and public address systems were added to the van inventory of equipment which added greatly to the range of operation. Loaded with safe boating literature and equipped with projectors

facilities the two "theaters-on-wheels" were popular attractions at state parks, marinas, shopping malls and sportsmen's functions. This season the two operators made contact with over 32,000 people. The vans' primary function to provide person-to-person contact on the scene makes them a valuable part of the Commission's boating safety program.

Again in 1977 one of the major vehicles of our boating safety education program was the *Pennsylvania Basic Boating Text*. This course and text rolled into one is an 80-page comprehensive basic safety and skills development book with a 50-question final test and four answer cards include to encourage all boating members of the family to take part in the course. The book had been mailed in 1976 to every registered boat owner in the Commonwealth. This year, continuing the program, a copy of the course was forwarded to each new boat owner upon registration of the craft for the first time.

Noting with concern that the trend in boating fatalities has turned toward small

craft, particularly operating on rivers and streams, Commission watercraft safety personnel focused on two areas during 1977. A new publication, *Sportsmen and Small Boats*, was produced by the Commission using grant-in-aid funds provided by the United States Coast Guard. The sixteen-page booklet, subtitled "Some Tips on Water Survival," illustrates some of the common hazards encountered by hunters and fishermen when using small boats. Particular emphasis in places on cold water boating and on operating on rivers and around dams. 500,000 copies were printed for statewide distribution through Commission district personnel, with a two-year supply provided the Pennsylvania Game Commission for inclusion in their Hunter Safety program.

BOATING ACCIDENTS

Boating accidents reported on Commonwealth waters continued the decline which began the previous year, with seventy-two accidents reported as com-

pared to 100 the year before. Personal injuries were reported at 31 compared to 49 in 1976. Property damage was almost halved, at less than \$70,000.

Fatalities remained on a plane with last year's record low, with 22 boating-related drownings reported during the year. The boating fatality figures for the 1970's compare as follows:

1970 — 35	1974 — 31
1971 — 26	1975 — 39
1972 — 53	1976 — 21
1973 — 38	1977 — 22

More than two-thirds of the fatalities occurred in nonpowered craft — canoes, rowboats and johnboats. Sixteen of the twenty-two happened on rivers and streams. The year's most tragic accident occurred on the Perkiomen Creek when four young people, aged 17-23, drowned in a single canoeing accident as their craft capsized at the base of a dam. Although all four persons were reported to be good swimmers, there was no personal flotation devices on board and the victims quickly succumbed in the cold February water.

Bureau of Fisheries and Engineering

Division of Fisheries

The Division of Fisheries is organized into four sections: Fisheries Management, Fisheries Research, Coldwater Fish Propagation, and Warmwater Fish Propagation. These four sections administer nearly all aspects of Pennsylvania's recreational fishery.

FISHERIES MANAGEMENT SECTION

The activities of the Fisheries Management Section were directed at three major areas of responsibility: coldwater fisheries; warmwater fisheries; and reptiles, amphibians and endangered species. A Warmwater Unit Leader was appointed and an Area Fisheries Manager was appointed for Area 7 (Middle Susquehanna river drainage). These appointments complete the statewide assignment of fisheries managers to geographical areas and permit implementation of an effective warmwater fisheries management program.

Fiscal year 1976-1977 marked the second year of the catchable trout phase of the inventory and classification program. During this year, 190 streams were surveyed. This means that in the past two years a total of 261 catchable trout



streams have been inventoried. This total constitutes 25.6% of all stocked trout water (lakes and streams) and 28.2% of stocked streams.

A federally funded warm water fisheries management project was developed during the last three months of the fiscal year, and this project will become active in fiscal year 1977-1978. The project includes six major areas of interest: lake inventory, warmwater stream inventory, angler demand analysis, program development, technique evaluations and program promotions. The objective of this project is to develop management by fishing resource category within five years.

The Commission has been assigned the responsibility for managing all of the Commonwealth's reptiles and amphibians. The Commission is also the responsible agency for meeting federal requirements and providing information relative to rare and endangered species of fish, amphibians, reptiles and aquatic organisms in

Pennsylvania. In order to adequately meet these responsibilities, a management program is being developed for reptiles, amphibians and endangered species. During this fiscal year, a program coordinator for reptiles, amphibians, and endangered species was designated; a checklist of all amphibians, reptiles and fish of Pennsylvania developed; a tentative classification of the status of these species (rare, threatened, endangered or peripheral) developed; and qualified experts asked to serve on advisory boards for consultation and advice on specialized programs.

A number of specific field studies and projects were completed or continued on schedule. These include: (1) Study to evaluate the effects on highway construction and the rerouting of the stream on Blockhouse Creek continued; (2) the semi-annual monitoring of the trout population in Big Spring Creek, Cumberland County, continued; (3) an inventory of Falling Spring Branch, Franklin County, led to a

cooperative habitat improvement program involving landowners, sportsmen's groups and the Commission; (4) efforts to establish smelt in selected lakes continued; (5) trout spawning in a tributary to Penns Creek were tagged to determine contribution of such streams to the fish population in larger streams; (6) the American shad restoration feasibility study of the Schuylkill and Lehigh Rivers was terminated with the recommendation that efforts be continued to gain shad passage to the Schuylkill River; and (7) a study of the water quality and fish stocks in the Pennsylvania waters of Lake Erie was continued.

During the fiscal year, division biologists conducted a total of 236 stream surveys, 50 lake surveys, and made approximately 14 pollution checks. Staff also engaged in a number of other activities related to fisheries management, including processing of 303 applications for use of aquatic herbicides, review of 135 applications for scientific collector's permits, participation in the Susquehanna River Anadromous Fish Restoration Committee's efforts; participation in the Delaware River Fisheries Technical Committee; and offering testimony at a variety of hearings regarding matters which could affect the aquatic resource. Staff biologists also took an active role in a number of conservation education programs and attended a number of meetings and conferences on subjects directly relating to fisheries science or sport fishing.

FISHERIES RESEARCH SECTION

The Fisheries Research Section continued to concentrate on problems associated with fish culture. The research effort is divided into five major fields of interest; fish pathology, fish cultural techniques, water chemistry, hatchery effluent studies, and whirling disease research.

Fish Pathology —

A total of 257 diagnostic investigations were conducted during the 1976-1977 fiscal year. The most frequently diagnosed problems, in order of prevalence, were: bacterial gill disease, furunculosis, bacterial hemorrhagic septicemia, external parasites, and IPN virus. Other problems encountered included gas bubble disease, ammonia toxicity, drug and chemical toxicity, environmental stress and dietary deficiencies.

Fish cultural Techniques —

Work continued on the Amur pike and Amur pike hybrid project. Several lots of Amur pike hybrids have been held to maturity and photographed. The Amur pike $\times$ northern pike hybrid is fertile and a male of that cross was used to fertilize muskellunge eggs this year. A manuscript on the Amur pike hybrids, done in con-



Conveyor used for fish loading results in saving of time and manpower.

junction with Dr. E. S. Crossman of Canada, has been accepted for publication in a scientific journal.

Efforts continued at the Van Dyke Anadromous Fishery Research Facility on the Juniata River. By October 1, 1976, more than three quarters of a million American shad fry and fingerlings had been released from Van Dyke. By June 30, 1977, another 81,000 fry had been released from Van Dyke and sufficient eggs had been received for a potential release of approximately a million by the fall of 1977. During this fiscal year, a utility company operating a hydroelectric station on the lower Susquehanna provided funding for operation of the Van Dyke facility.

A federally funded project was established to study the effects and relative success of feeding several dry, milled feeds to tiger muskellunge. Results of this study should provide coolwater fish culturists with (1) information on rearing techniques, (2) indication of problems involved with diets now available and which might be the best diet, (3) an idea of the effects, if any, of a dry feed on the internal organs and general condition of coolwater fish.

Water Chemistry —

During the 1976-1977 fiscal year, 811 samples were submitted to the Benner Spring water quality laboratory for analysis. A total of 7,616 physical, chemical and bacteriological tests were performed.

Effluent Studies —

Four Pennsylvania Fish Commission hatcheries (Big Spring, Oswayo, Pleasant Gap and Tionesta) were evaluated as to

the effectiveness of their effluent wastewater treatment systems. Sampling was conducted on a monthly basis with each sample series representing an appropriate composite. Sampling locations consisted of representative sites so that each wastewater treatment structure could be evaluated and realistically compared.

Fish culture stations with DER industrial waste or sewage treatment permits with compliance limitations were monitored. Efficiency studies were conducted at each wastewater treatment facility. Monthly water quality monitoring reports were also required at some facilities. These were completed and submitted to the appropriate regional DER office. Also, federal discharge permit (NPDES) applications for a Pennsylvania Fish Commission hatchery have been submitted to the EPA regional office in Philadelphia.

Whirling Disease Research —

The five-year, federally funded study whirling disease was completed. The final report and results have been submitted. It was concluded that: whirling disease probably cannot be transmitted by transfer of disinfected eggs, no drugs are effective in control of the disease, some chemicals are effective in disinfecting raceways and ponds against whirling disease and ultraviolet radiation is effective against the disease organisms suspended in water. Very sensitive diagnosis and staining techniques were developed as a result of this project. Plans are being developed for continuing study relative to the susceptibility of various species of salmonids and to the fate of the disease in natural environments.

COLDWATER PROPAGATION SECTION

The Coldwater Propagation Section includes all trout rearing activities in Commission hatcheries as well as responsibility for the cooperative nurseries.

Fish Commission Hatcheries —

The section hatcheries stocked 1,786,-551 pounds of trout, including 4,465,833 adult trout averaging 9.48" in length and 1,804,560 trout fingerlings. This production was achieved despite construction and renovation at the Huntsdale and Benner Spring Stations. Despite rising operating and labor costs, the cost per pound of trout produced was only slightly greater than in the previous fiscal year. Nine fish cultural stations contributed to the trout stocking effort.

The Commission's Lake Erie salmon program continued to be successful with emphasis on coho salmon smolt production and chinook fingerling production. A total of 1,614,907 salmon, including 978,925 chinook fingerlings, was released

into Lake Erie tributaries and Presque Isle Bay.

Cooperative Nursery Branch —

The branch continued to play an important role in the Commission's effort to actively involve Commonwealth sportsmen in enhancing their own sport. The growth of the program and the effectiveness of the CO-OP propagation effort merited recognition of the branch as a major production operation and was included in the Trout Propagation Section. The Cooperative Branch, through Commission hatcheries, provided 1,061,990 fingerling trout, 100,000 eyed brook trout eggs, 195,000 eyed brown trout eggs, 280,-000 green walleye eggs, 6,000 largemouth bass fry, and 6 quarts of daphnia to sportsmen's sponsored nurseries. A total of 139 sportsmen's clubs sponsored 170 units (166 trout and 4 warmwater) in 49 counties. Cooperative nurseries stocked trout in 701 water areas in 52 counties and warmwater fish in 8 water areas in 4 counties. Cooperative nursery stockings included 864,542 trout, 2,783 largemouth

bass, 1,038 sunfish, 3,840 yellow perch, 400 bullheads, and 250,000 walleye fry.

WARMWATER PROPAGATION SECTION

The Warmwater Propagation Section produced a variety of fry, fingerling and adult fishes in response to the needs of fisheries management programs. Significant advances were made in techniques to rear tiger muskellunge and walleye in tanks and raceways utilizing artificial diets. The new intensive culture building and raceways at the Huntsdale Fish Cultural Station were placed into production of coolwater fishes (muskellunge, tiger muskellunge, and walleye) for the first time. The contribution of these modern rearing facilities will be reflected in the following year's production total as most of the fish will be stocked in late summer and fall of 1977.

The results of propagation efforts of all Fish Commission fish cultural stations are summarized in the accompanying table.

FISH STOCKED BY STATE HATCHERIES ONLY DURING FISCAL YEAR JULY 1, 1976 to JUNE 30, 1977

SPECIES	FRY	FINGERLING		ADULT		GRAND TOTAL	
	Number	Number	Weight	Number	Weight	Number	Weight
TROUT							
Brook Trout		432,200	9,999	916,309	346,688	1,348,509	356,687
Brown Trout		602,300	5,550	1,535,167	593,597	2,137,467	599,147
Rainbow Trout		754,900	20,467	1,966,759	787,930	2,721,659	808,397
Palomino Rbw. Trout		1,460	146	37,495	20,645	38,955	20,791
Lake Trout		13,700	724			13,700	724
Steelhead Trout				10,103	805	10,103	805
TOTAL TROUT		1,804,560	36,886	4,465,833	1,749,665	6,270,393	1,786,551
SALMON							
Coho		635,955	38,740	27	70	635,982	38,810
Kokanee		536	13			536	13
Chinook		978,925	3,759			978,925	3,759
TOTAL SALMON		1,615,416	42,512	27	70	1,615,443	42,582
GAMEFISH							
Chain Pickerel		650	65			650	65
Largemouth Bass	34,000	38,900	809	869	885	73,769	1,694
Muskellunge		113,221	8,031			113,221	8,031
Northern Pike		27,700	1,016			27,700	1,016
Smallmouth Bass							
Walleye	59,300,000	257,420	621	3,827	7,301	59,561,247	7,922
American Shad	828,250	41,453	139			869,703	139
Amur Pike Hybrids		252	17	12	40	264	57
Striped Bass		195	7			195	7
TOTAL GAMEFISH	60,162,250	479,791	10,705	4,708	8,226	60,646,749	18,931
PANFISH							
Black Crappie		14,500	33	8,957	7,325	23,457	7,358
Bluegill				4,573	2,129	4,573	2,129
Brown Bullhead				16,429	12,859	16,429	12,859
Carp				2,401	7,716	2,401	7,716
Channel Catfish				5	8	5	8
Sunfish (Common)		5,170	21	2,830	580	8,000	601
White Crappie							
Yellow Bullhead							
Yellow Perch		7,500	244	3,539	1,358	11,039	1,602
White Bass				216	162	216	162
TOTAL PANFISH		27,170	298	38,950	32,137	66,120	32,435
FORAGE FISH							
Pickerel				2	3	2	3
TOTAL FORAGE FISH				2	3	2	3
GRAND TOTAL	60,162,250	3,926,937	90,401	4,509,520	1,790,101	68,598,707	1,880,502

Division of Engineering

The Engineering Division is responsible for the development, improvement and maintenance of the physical resources and facilities owned or controlled by the Commission. The division's expenditures for the fiscal year 1976 totaled \$3,810,000. Funding was from the following sources: Commonwealth Land and Water Conservation and Reclamation Act (Project 500) — 42%; Fish Commission Fish Fund — 25%; Federal Aid in Sport Fish Restoration (D-J) and Anadromous Fish Conservation Acts — 21%; and Fish Commission Boating Fund — 12%. The division's projects were all part of Commission programs for the administration of Pennsylvania's recreational fisheries and fishing and boating public use facilities. The emphasis this year was primarily on those programs for public access areas, hatcheries, and the restoration of river fisheries.

In April, 1977, continuance of the Commission's effort in its own capital development and improvement projects relative to the responsibilities of the newly established Commonwealth Department of General Services was defined in an agreement of understanding between the two agencies. Essentially, the Commission will continue its own in-house engineering and architectural design services and force account construction activities. However, future contracted projects involving expenditures of more than \$25,000 will be administered by the Department of General Services. The agreement gives the Commission the benefits of being able to continue to carry out its development program with its own experienced personnel.

The division's principal project under the access area program for the year was the renovation and expansion of public facilities at the Walnut Creek Access Area on Lake Erie. The project consisted of the construction of a bituminous paved road and parking lot system, boat launching ramp, and small boat harbor of refuge. The capacity of the parking lot was increased from 60 to 160 cars with boat trailers and 280 without, and overflow capacity was provided for another 100 cars and trailers on designated lawn areas. Simultaneous boat launching and retrieval capacity was increased from two to six. A 228' x 287' small boat harbor was developed and a floating dock system with overnight berthing for 72 boats of up to 20' length was installed.



Every attempt is made to provide access to fishing and boating waters with as little disturbance to natural settings as possible.

This is the Bradys Bend Access Area, Allegheny River, Armstrong Co.

The Commission's Walnut Creek Access Area has become the mecca for many Lake Erie walleye and salmon fishing enthusiasts. Because of that, during the six to eight weeks in the fall when the salmon "run," the expanded facilities are already being used to capacity. The cost of the project at Walnut Creek, including engineering, was \$671,600. Of that total, \$250,000 came from a U.S. Fish and Wildlife Service D-J Act grant, \$45,000 from the Commission's Boating Fund, and the balance from Commonwealth Project 500 funds.

The Engineering Division also began design work on a \$250,000 multi-purpose building for the Walnut Creek Access Area. The building will house modern public rest rooms, visitor's areas, fish cleaning facilities, and an attendant's office. Appurtenant to the project is the development of a potable water supply and on-site sewage disposal systems. It is anticipated that the project will be funded with Federal Bureau of Outdoor Recreation, Commission Boating, and Commonwealth Project 500 funds.

Other access program construction projects completed during the year were the Conneaut Lake Access Area, Crawford County, and the Goldsboro Access Area on the Susquehanna River, York County. At Conneaut Lake a paved parking lot for 42 cars with boat trailers, and a boat launching ramp were constructed. This was a Commonwealth 500 project and cost \$129,000. At Golds-

boro a paved parking lot for 50 cars with boat trailers, a boat launching ramp, and a floating boat boarding dock were constructed. This was also a Project 500 development and cost \$111,500, with the Commission's Boating Fund sharing \$3,600 of that cost. The Commission is planning further expansion of the Goldsboro facilities due to increased demand for additional vehicle parking and boat mooring capacity. Five lesser improvement projects completed were the enlargement, regrading and paving of the parking lot and boat launching ramps at the Mifflintown, Muskrat Springs, Greerwood, Thompsonstown, and Walker Access Areas along the Juniata River in Juniata and Perry Counties.

Plans were completed and construction started on two new access areas. One located on Bessemer Quarry Lake, Lawrence County. Estimated project cost is \$58,000 with funding shared 25% by the Commission's Fish Fund and 75% by the U.S. Fish and Wildlife Service D-J Act grant. The other access facility under construction is at Bradys Bend on the Allegheny River in Armstrong County. Estimated project cost is \$77,000 with funding shared 50% by the Commission's Boating Fund and 25% each by the Commission's Fish Fund and a U.S. Fish and Wildlife Service D-J Act grant.

The division's staff drew up the plans for two future access areas on the Susquehanna River. Those areas are scheduled for construction early next year. One

near Mahantango, Snyder County, the other at Fort Hunter, a suburb of Harrisburg, in Dauphin County. The cost of each will be shared by the Commission's Fish and Boat Funds, and a U.S. Fish and Wildlife Service D-J Act grant.

Division personnel acting with the Commission's Real Estate Division specialists investigated eleven sites on waterways throughout the Commonwealth as possible locations for new fishing and boating access areas. Also, inspections and surveys were conducted at six existing access areas for data needed to plan for future renovation or improvement projects: The partial rebuilding of the road into Meadow Grounds Lake, Fulton County; establishment of a new right-of-way into the Ebensburg Reservoir, Cambria County; and the repair of erosion and ice damage at the Oil City Access, Venango County. In addition, other tasks included conducting final inspections in connection with the bond requirements of three previously completed contracted construction projects.

During the year, hatchery development and renovations exceeded all other programs in both capital costs and engineering complexity. Three major projects were completed, construction continued on a fourth, and engineering began for a fifth. Construction and renovation project, funded by a Commonwealth Project 500 grant, was substantially completed on June 30, 1977. The division's staff spent a year designing the project, while construc-

tion, which was mainly by contract, took two years. In addition to modern trout projection units and appurtenant water supply and drainage structures, a large part of the project was specifically designed for the culture of "coolwater" species: muskellunge, pike, and walleye. With the development of the "coolwater" facilities the Commission can undertake, along with its existing trout and warm-water production programs, a distinct new program to propagate and stock cool-water species.

The second hatchery project completed during the year was the development of the Fairview Fish Cultural Station, Erie County. The project, which was designed by the division's staff and constructed by public contract, spanned about two and one-half years and was substantially completed in November, 1976. This totally new facility contains a building for taking and fertilizing salmon eggs and a concrete raceway series for the later stage of rearing salmon fingerlings to smolt, which are released into Lake Erie. The intervening process of hatching the eggs and rearing the resultant fry to fingerlings is conducted at the Linesville, Crawford County, and Tionesta, Forest County, Fish Cultural Stations. The Fairview project cost a total of \$834,000 of which \$461,500 was funded by a Commonwealth Project 500 grant and \$372,500 by a U.S. Fish and Wildlife Service Anadromous Fish Conservation Act grant.

The third hatchery project was the re-

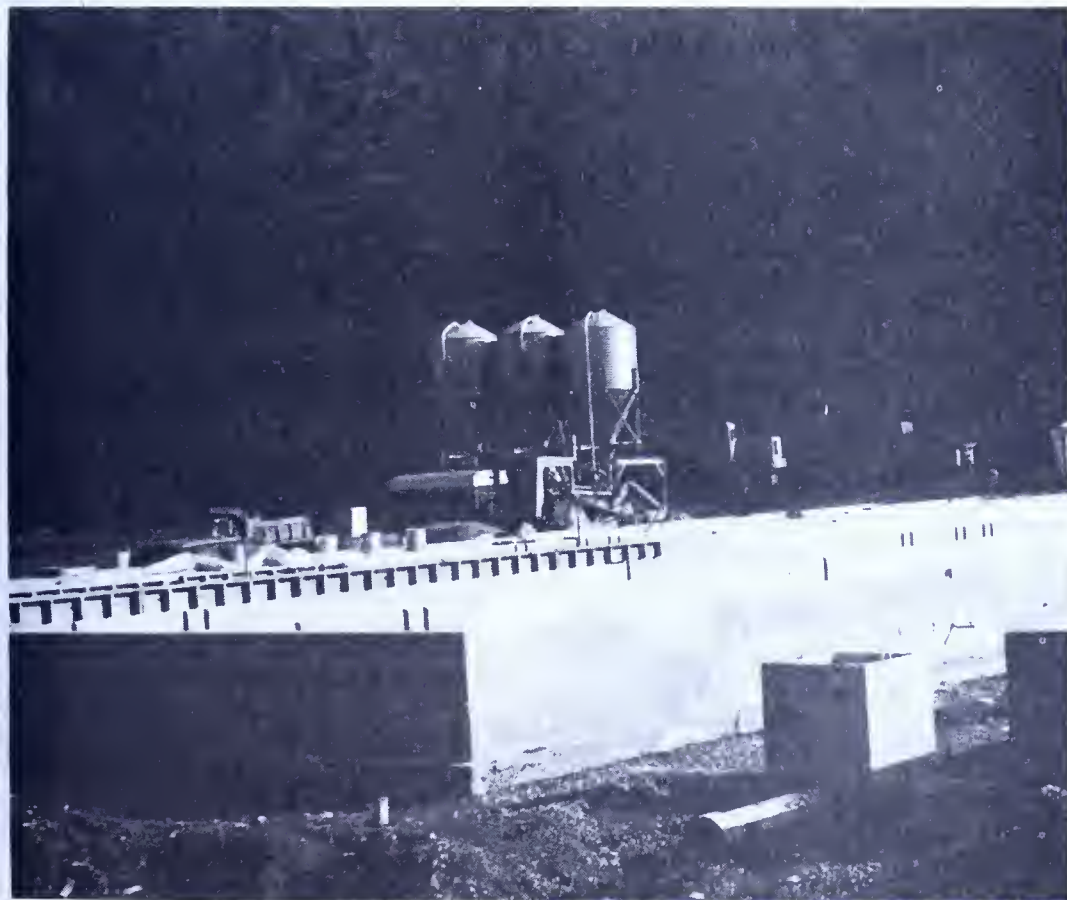
construction of the Lower Spring Creek Unit of the Spring Creek Fish Cultural Station, Centre County. This project consisted principally of the replacement of earthen raceways used for trout production by concrete raceways, and addition of a well water supply and aeration structures, and provision of waste treatment facilities. The project, which was both designed and constructed by division personnel, covered a period of three years and was completed in December, 1976. Project cost was \$1,100,000 which was completely funded by a Commonwealth Project 500 grant.

Of interest is a minor project, the Van Dyke Shad Station on the Juniata River in Juniata County, which was completed in May, 1976 by the division's engineering and construction personnel. This project consisted of the development of pilot or experimental shad hatchery. The facility is primarily a "barrel and pond" operation, costing under \$50,000 to develop. Development was funded by the Commission's Fish Fund and a special grant of \$34,000 from the Pennsylvania Power and Light Company is supporting this year's operation.

The fourth major hatchery project of the year, the reconstruction and renovation of production facilities at Benner Spring Fish Cultural Station, Centre County, by division construction forces, continued through the year. The project, begun last year, is expected to be completed in three years. The new facilities replace an obsolete system of earthen raceways and ponds and will be used for the production of trout and coolwater species. The project also includes the conversion of the ground floor of the Benner Spring Research Building into a "hatchhouse" and the addition to the building of a wing containing a "wet lab." The estimated cost of the project is \$1,600,000 of which \$700,000 is funded by a Federal Bureau of Outdoor Recreation grant, \$50,000 by a Commercial Fisheries Research & Development Act grant, and the balance by a Commonwealth Project 500 grant.

The fifth hatchery project undertaken by the division's staff was the engineering and design work required to renovate the Pleasant Mount Fish Cultural Station, Wayne County. The first phase of the project consists of the replacement of the station's obsolete system of earthen raceways and ponds by modern concrete raceways and ponds designed for trout and coolwater species production. The second phase will include the renovation of the station's hatchhouses and other buildings. Construction of the project will be by public contract and is expected to begin by the middle of next fiscal year. The estimated cost of phase one is \$1,300,000 and phase two \$400,000. Funding of the

These are the Benner Spring production facilities undergoing renovation.



project is anticipated to be by Federal Economic Development Administration and Commonwealth Project 500 grants.

For years the Commission has promoted a program to construct fishways over the dams on the Susquehanna and Schuylkill Rivers for the purpose of restoring the natural runs of shad, herring and other fisheries which the dams prevent. At long last, the first sign of success appeared during the year when the City of Philadelphia applied for a Federal Economic Development Administration grant of \$425,000 to construct a fishway over the first dam, the Fairmount Park Dam, that blocks fish passage on the Schuylkill River. The Commission's Engineering Division in cooperation with the U.S. Fish and Wildlife Service during the year produced plans and specifications for the fishway. Construction of the fishway is scheduled to begin in November 1977. The Commission's share of the project is estimated to be \$40,000 and is jointly funded by the Fish fund and the U.S. Fish and Wildlife Service's Anadromous Fish Conservation Act.

With the exception of planning and design work for rebuilding the dam at Reinings Pond, Wayne County and Ford Lake, Lackawanna County, the division's tasks for the Commission's fishing lake program were largely limited to property surveys. The division surveyed and/or handled property-related requests at: Mauch Chunk Lake, Carbon County; Lily Lake, Luzerne County; Keystone Lake,

Armstrong County; Minsi Lake, Northampton County, and Kahle Lake, Lehigh County. For the near future, the division's tasks on the lake program will largely be confined to necessary maintenance and improvement work at existing lakes.

Additional projects performed during the year were: development of conceptual designs for renovation of the Stackhouse School and Administration Building, Centre County; inventory of all pumps in the hatchery systems; construction of a walleye rearing marsh at Nockamixon Lake, Bucks County; construction of a patrol boat shelter at Raystown Lake, Huntingdon County; construction of groins to control erosion along the lake shoreline at Walnut Creek Access Area, Erie County; property acquisition survey of spring-filled gravel pits adjacent to the Fairview Station, Erie County; demolition of a hazardous unused mill building on the grounds of the Cedar Springs Station, Clinton County; and many miscellaneous tasks such as rewiring Commission buildings, installing heating system, installing gasoline tanks and pumps, repair of domestic water systems, construction of display units and panels for exhibits, installing office partitions, reshingling roofs, and installing fencing and steps at permanent salmon collecting facilities on Lake Erie tributary streams.

The Fish Commission is one of the several Commonwealth agencies responsible for the protection of Pennsylvania's water resources, and the Fisheries Envi-

ronmental Services Branch of the Engineering Division bears a large part of the Commission's share of that responsibility. The branch's function is to protect and improve those streams, lakes, and waterways in which the Commission stock or fosters fish life. It carries out its duties both in conjunction with other governmental departments or agencies in close cooperation with private conservation groups. During the year, branch personnel attended public meetings held by the Corps of Engineers for flood control projects, taught conservation education classes, attended hearings on pollution cases, provided technical assistance to groups performing stream improvement projects, planned stream bank stabilization and channel change projects, participated in meetings with other agencies to control strip mining, and inspected pipeline stream crossings. It reviewed making recommendations where necessary, a total of: 785 Department of Environmental Resources dams and encroachment permit applications; 1,200 DER permits; 607 mine drainage permit applications; 502 sets of highway plan; 1,012 Corps of Engineers public notices; 384 Environmental Protection Agency public notices; 80 plans of DER stream improvement projects; 9 proposed Delaware River Basis Commission projects; 633 State Clearing House projects; and miscellaneous permits and applications.

Besides responsibility for carrying out the Commission's capital development projects, the Engineering Division is responsible for the routine maintenance of the Commission's statewide public utilities facilities and various operational units. Those include 228 public fishing and boating access points, 37 of which are cooperatively maintained under agreements with local municipalities or other organizations; 56 public fishing lakes owned or controlled by the Commission, and 17 public fishing stream segments. In March 1977 the number of the division's sectional maintenance crews was increased to five with the creation of a new unit operating out of the Pleasant Gap Fish Cultural Station, Centre County. The crews during the year, additionally performed routine maintenance at 3 law enforcement regional offices, 2 arc fisheries managers offices, and 2 salmon weirs. The crews were also called upon to assist in the maintenance and operation of the Commission's fourteen fish culture station complexes and four propagation lakes. The division's expenditure for maintenance in this fiscal year was funded with \$143,000 from the Boat Fund and \$369,000 from the Fish Fund. Of the latter amount, approximately \$158,000 will be shared by a U.S. Fish and Wildlife Service D-J Act grant.

An interior view of the Van Dyke Research Station for Anadromous Fishes.



Bureau of Administrative Services

During this fiscal period, the operations of the bureau in the administrative coordination and implementation of the Commissions services functions continued to become increasingly critical. This was, and continues to be the case in the areas of total Commission budgeting and financial analysis as a result of the need to meet ever-increasing operational costs and, at the same time, meet the growing need to provide fishing and boating recreation opportunities throughout the Commonwealth.

Administrative functions of the bureau in addition to the budgeting and financial analysis functions already described include: land and water acquisition, federal aid coordination, issuance of special permits and licenses, automotive services, affirmative action, purchasing and procurement, planning, retirement, duplicating and printing services, inventory records, personnel and payroll, training, retirement counseling, central files, mail processing and messenger service, warehousing, other incidental functions and the production, shipping and accounting functions for all fishing licenses sold by issuing agents. Fishing license sales again increased over the sales of previous years, and additional increases are anticipated for future years, clearly indicating increasing public awareness of fishing as a rewarding form of outdoor recreation.

LAND & WATER ACQUISITION

The principal responsibility of the Real Estate Division is securing land and water rights for public fishing and boating purposes. The division is likewise responsible for the routine management of these rights following acquisition.

The continuing demand by the public to acquire water-oriented recreational lands for their private use not only has caused a steady increase in land values, but also has drastically reduced the number of developable sites.

Confronted with limited acquisition funds, the Real Estate Division continued with its efforts to secure in fee, and by long-term leases, agreements with municipalities, water authorities, redevelopment authorities, state and federal agencies and industries owning waterfront properties.



The Fort Hunter Access Area on the Susquehanna River, Dauphin County.

Some of the major acquisitions and lease agreements completed or worked on are as follows:

Stream Acquisition:

Susquehanna River, Dauphin County (Halifax Access, 12.27 acres); Fort Hunter Access (1.985 acres); North Branch Susquehanna River, Wyoming County at West Falls (2.527 acres); West Branch Susquehanna River, Clinton County at North Bend (8.05 acres).

Additional land being considered for acquisition at Lake Silkworth in Luzerne County (3.0 acres), and land was acquired at the Huntsdale Fish Cultural Station (0.236 acres) for hatchery expansion.

Cooperative Lease Agreements:

Tidioute Borough, fishing and boating access to the Allegheny River, Warren County; Pardee Beach (renewal), fishing and boating access to the Delaware River, Monroe County; Montoursville Borough, fishing and boating access to the West Branch of the Susquehanna River, Lycoming County; Keystone Lake (renewal), five boating and fishing accesses on lake, Armstrong County; Elizabeth Township, boating and fishing access to the Youghiogheny River, Allegheny County; Van Dyke anadromous research agreement with DER, Juniata County; Northeast Fisheries Management office agreement, Pike County; Special Use agreement with Gateway Clipper, Inc., Allegheny County; Raystown Lake Fish and Motorboat Law Enforcement agreement, Tioga County; Conestoga Trail Association agreement on Speedwell Forge Lake with Lancaster

Hiking Club, Lancaster County; Reining's Pond photogrammetric survey agreement with PennDOT, Wayne County; Rockview State Correctional Institution agreement (various research projects), Centre County.

Right-of-Way Agreements:

Tidioute Access, Warren County, with Tidioute Borough; Walnut Creek Access, Erie County, with Pennsylvania Electric Company; Jacobs Creek, Fayette County, with West Penn Power Company; Kahle Lake, Clarion and Venango Counties, with North Penn Gas Company; Speedwell Forge Lake, Lancaster County with Denver and Ephrata T&T Company; Minsi Lake, Northampton County, with Metropolitan Edison Company and County Commissioners.

In addition to the above 27, stream improvement project leases were processed, 46 special use permits were reviewed and processed and over 53 access area investigations were conducted all throughout the Commonwealth.

SAND & GRAVEL ROYALTIES

The Pennsylvania Fish Commission received \$208,439.85 in royalty payments from dredging companies operating in Commonwealth waters during the 76-77 fiscal year. Cumulative receipts since the passage of Act 225 (Fiscal 70-71) amount to \$1,745,779.12. Although this amount reflects a \$19,262.50 increase over the prior year, we do anticipate a steady decline in this revenue due to the phase-out of dredging on the Upper Allegheny River ordered by the Department of Environmental Resources.

MISCELLANEOUS LICENSES & PERMITS

The Miscellaneous License and Permit Section reviewed and issued the following:

Regulated Fishing Lake	272
Artificial Propagation	168
Live Bait Dealers	545
Transportation	79
Net Permits	221
Scientific Collector	172
Draw Down	148
Dynamite	26

The following applications were reviewed and acted upon in conjunction with other Commonwealth agencies:

Mine Drainage	748
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PERSONNEL

The following are the highlights of some of the accomplishments of the Personnel Office:

Labor Relations: The new AFSCME Agreement was implemented. Contract briefings were held for supervisory personnel. New seniority units were established for purposes of promotion and furlough. The Master Agreement was amended to provide more liberal use of compensatory time instead of direct payment for overtime.

Training: A six month orientational training program was developed and implemented for newly appointed fish culturists. The purpose was to provide overall exposure to nearly all areas of fish culture and provide superintendents with a better way of evaluating employees.

Classification: 95 positions were reviewed to insure correct classification. A compensation study was prepared and implemented for management employees. New specifications were prepared for 7 classes.

Employment: Proposals were sent to CETA prime sponsors resulting in approval of grants for \$92,000 for temporary employees in Erie, Potter and Wayne Counties.

Transactions: 887 transactions were fully processed by the Personnel Office. Over 2,000 transactions were processed.

Benefits: 49 retirement estimates were prepared and 11 individual retirement counseling sessions were held. 246 other cases involving benefits were handled.

The average salary complement during the fiscal year was 416 — a reduction of 6 positions from the previous fiscal year. For permanent positions during the period, 11 appointments and 15 separations occurred.

FEDERAL AID

The section on Federal Aid Coordination prepared and presented ten new projects* and seven new project segments to existing projects** during the year ended June 30, 1977. Total federal reimbursements and grants for the year were \$1,400,279.38. Billings to the federal government, outstanding at the end of the year totaled \$97,644.46. Total reimburse-

ments were distributed as follows:

Fish Fund	\$577,038.38
Boat Fund	200,667.00
Project "500" Fund	622,574.00
Total	\$1,400,279.38

Documentation was executed during the year on the following existing and new projects.

Anadromous Fish Act

	Planned Cost	Anticipated Reimbursement
** Coho (AFS-5-6)	\$160,000.00	\$80,000.00
** Brandywine Shad Study (AFSC-4-8)	750.00	500.00
** Delaware River Research (AFS-2-11)	5,000.00	-0-
* Fairmount Dam Fish Ladder (AFS-7-T-1)	40,460.00	20,230.00
	\$206,210.00	\$100,730.00

Fish and Wildlife Restoration (D-J)

** D-J Maintenance (F-30-D-12)	\$250,087.00	\$187,565.25
* Bradys Bend Access Area (F-54-D-1)	77,000.00	28,875.00
* Bessemer Quarry Lake Access Area (F-55-D-1)	58,000.00	43,500.00
* Fort Hunter Access Area (F-56-D-1)	24,984.00	9,369.00
	\$410,071.00	\$269,309.25

Commercial Fish Act

** Commercial Effluent Study (3-242-R-3)	\$58,323.00	\$43,742.25
* Wet Lab-Benner Spring Research Station (3-272-C)	200,000.00	50,000.00
* Commercial Fish Study, Lake Erie (3-283-R-1)	63,500.00	47,625.00
	\$321,823.00	\$141,367.25

Federal Land & Water Conservation Fund (BOR)

** Statewide Outdoor Recreation Plan — Update — Phase II — (42-00482)	\$80,000.00	\$40,000.00
* Benner Spring Fish Cultural Station — Construction & Renovation (42-00456) (Stage I)	1,179,100.00	\$589,550.00
	\$1,259,100.00	\$629,550.00

U.S. Department of Transportation (U.S. Coast Guard Grant)

** Boating Safety Program (1701-42)	\$145,999.00	\$145,999.00
	\$145,000.00	\$145,999.00

Fish & Wildlife Act of 1956

* Coolwater Diet Test Study (Contract 14-16-0009-77-045)	\$33,600.00	\$33,600.00
* Whirling Disease Study (Contract 14-16-0009-77-060)	16,875.00	16,875.00
	\$50,475.00	\$50,475.00

U.S. Department of Commerce (Fishery Conservation & Management Act of 1976)

* Mid-Atlantic Fishery Management Council (Contract 04-7-158-44028)	\$7,000.00	\$7,000.00
	\$7,000.00	\$7,000.00

GRAND TOTALS	\$2,400,678.00	\$1,344,430.50
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Comptroller's Office

The Fish Fund balance as of June 30, 1977, rose to \$5,719,428.46, an increase of \$389,483.99 over the previous fiscal year.

Total revenue received amounted to \$9,024,412.28, an increase of \$546,868.26 over the previous fiscal year. This was due primarily to an increase in resident fishing license sales and an increase in Federal Aid for fish restoration.

Expenditures and commitments during the 1976-77 fiscal year totaled \$8,754,267.33. This figure represents a \$714,378.49 increase over the previous fiscal year, due mainly to increased salaries and employee benefits as well as the higher cost of fish food, utilities, motor vehicles and land acquisition.

In reviewing the future needs of the Fish Fund, it should be pointed out that although the balance of the Fish Fund is higher this year than the previous year, this trend will not continue. Expenditures

for current operations are increasing at a level considerably higher than the anticipated revenue to be received from current sources. In order to maintain the solvency of the Fish Fund for as long as possible, the current year's budget has been cut to the bone, only the most essential items are included. However, this is a temporary measure; it will be necessary to obtain additional revenue as soon as possible if the Commission is to avoid more drastic cuts in programs and services in the near future.

The results of operations for the Boating Fund for the 1976-77 fiscal year indicate a net operating increase of \$326,575.13 which brings the amount available for commitment and expenditure as of June 30, 1977, to \$3,828,335.91. Receipts totaled \$2,204,983.73 which was approximately the same as the previous year. Expenditures and commitments totaled \$2,013,189.37 which represented an increase of \$195,793.42 over the previous fiscal year. Increased salary and employee benefits make up the largest part of the increase in costs over the previous year.

As indicated above, the Boating Fund again increased in total. The short range outlook is encouraging for continued

stability. The combined resources of the Boating Fund and the Fish Fund have provided Pennsylvania with one of the best fishing and boating locations in the country.

EARMARKED FUNDS

Act 458, Session of 1963, printed under Section 290 of the Fish Law, provides that the sum of fifty cents (50¢) from each resident and nonresident fishing license fee, senior licenses excluded, be expended for "(1) the acquisition, leasing, development, management and maintenance of public fishing waters and of areas for providing access to fishing waters and the carrying out of lake and stream reclamation and improvement; (2) the rebuilding of torn out dams; and (3) the study of problems related to better fishing, but in no event shall any of the funds be used for propagation of trout." In order to meet this requirement of the Fish law, a minimum expenditure of \$477,500.00 for the above stated purposes was necessary. Actual expenditures were \$1,669,522.24, resulting in the Fish Commission spending \$1,192,022.24 more than the required minimum for these activities during the fiscal year.

The Project 500 is a statewide bond issue passed by the legislature in 1968 for the conservation and reclamation of the land and water resources of the Commonwealth. During the 1976-77 Fiscal Year, the Fish Commission expended and committed \$2,218,954.45, for a cumulative total of \$20,721,567.08 expenditures and commitments to date from the inception of the Project 500 Fund.

FISH FUND		AMOUNT AVAILABLE FOR COMMITMENT & EXPENDITURE	JUNE 30, 1977
Amount Available for Commitment and Expenditure, July 1, 1976.....			\$5,329,944.47
Plus: Prior Year Adjustment — Cancellation of Prior Commitments.....			119,339.04
Adjusted Amount Available, July 1, 1976.....			\$5,449,283.51
Results of Operations — 1976-77 Fiscal Year:			
Total Revenue Received.....		\$9,024,412.28	
Less: Expenditures and Outstanding Commitments.....		8,754,267.33	
Net Operating Increase.....			270,144.95
Amount Available for Commitment and Expenditure, June 30, 1977.....			\$5,719,428.46
BOATING FUND			JUNE 30, 1977
Amount Available for Commitment and Expenditure, July 1, 1976.....			\$3,501,760.78
Plus: Prior Year Adjustment — Cancellation of Prior Commitments.....			134,780.77
Adjusted Amount Available, July 1, 1976.....			\$3,636,541.55
Results of Operations — 1976-77 Fiscal Year:			
Total Revenue Received.....		\$2,204,983.73	
Less: Expenditures and Outstanding Commitments.....		2,013,189.37	
Net Operating Increase.....			191,794.36
Amount Available for Commitment and Expenditure, June 30, 1977.....			\$3,828,335.91

FISH FUND — REVENUE JULY 1, 1976, TO JUNE 30, 1977

Resident Fishing Licenses — Regular.....	\$6,629,050.04
Resident Fishing Licenses — Senior.....	164,371.56
Nonresident Fishing Licenses.....	505,275.50
Tourist Fishing Licenses.....	122,811.50
Other Licenses — Commercial Hatcheries, Private Lake Fishing Fees, etc.....	24,796.58
Federal Aid for Fish Restoration, Research, and Flood Damages.....	577,038.38
Interest on Securities and Deposits.....	258,125.40
Income from Sand & Gravel Dredging.....	208,439.85
Fish Law Fines.....	174,684.40
Pennsylvania Angler Subscriptions and Sale of Publications.....	133,521.00
In-Lieu Payments of Erection of Fishways.....	75,000.00
* Other Revenue.....	69,013.61
Sale of Used Autos and Other Vehicles.....	37,225.00
Rental of Fish Commission Equipment.....	25,305.20
Contributions for Restocking Streams.....	19,754.10
TOTAL REVENUE	\$9,024,412.28

* Other Revenue consists of refunds of prior year expenditures, boat mooring permits, gas and oil royalties, services and inspection agreements with fishing Fish Commission personnel, etc.

FISH FUND REVENUE — \$9,024,412.28

Resident Fishing Licenses	75.3%
Nonresident & Tourist Fishing & Other Licenses	7.2%
Federal Reimbursements	6.4%
Interest Income	2.9%
Income from Sand and Gravel Dredging	2.3%
Fish Law Fines	1.9%
Sale of Publications	1.5%
Contributions, Other Revenue	1.0%
In-Lieu of Fishways Payments	.8%
Equipment Rental, Sale of Vehicles	.7%

FISH FUND — EXPENDITURE & COMMITMENT BY DIVISION

Executive Office.....	\$89,451.65
Comptroller Services.....	124,966.71
Administrative Services.....	699,462.55
Land and Water Acquisition.....	127,395.00
Information & Education.....	359,874.51
Legal Services.....	16,010.34
Propagation.....	3,794,539.53
Fisheries Management.....	557,787.48
Research.....	242,417.40
Engineering and Development.....	682,354.93
Environmental Services.....	69,493.60
Maintenance.....	368,848.24
Law Enforcement Services.....	1,558,532.36
Fish Fund — General Operations — Total.....	\$8,691,134.46
Dept. of General Services — General State Authority Rentals.....	62,132.87
Treasury Department — Replacement Checks.....	1,000.00
TOTAL	\$8,754,267.33

BOATING FUND — REVENUE JULY 1, 1976, TO JUNE 30, 1977

Transfer from Motor License & Liquid Fuels Tax Fund	\$1,015,901.73
Motorboat Registration Fees — Fish Commission	768,595.58
Motorboat Registration Fees — Delaware River Navigation Office	9,325.42
U.S. Coast Guard Grant for Boating Safety Program	200,667.00
Interest Received on Securities	166,062.93
Motorboat Fines	35,432.00
Issuance of Capacity Plates for Boats	6,111.14
Sale of Used Autos and Other Vehicles	1,925.00
Miscellaneous	962.93
TOTAL REVENUE	<u>\$2,204,983.73</u>

* Act 65, Session of 1931, as amended March 12, 1957, provides for an annual transfer to the Boating Fund, the amount of the liquid fuels tax paid on liquid fuels consumed in the propulsion of motorboats and other motocraft on the waters of the Commonwealth, including waterways bordering on the Commonwealth.

BOATING FUND REVENUE — \$2,204,983.73

Transfer from Motor License and Liquid Fuels Tax Funds	46.1%	
Motorboat Registration Fees	35.3%	
U.S. Coast Guard Grant for Boating Safety	9.1%	
Interest Income	7.5%	
Motorboat Fines	1.6%	
Other Sources	.4%	

BOATING FUND — EXPENDITURE & COMMITMENT BY DIVISION

Executive Office	\$9,785.00
Comptroller Services	36,800.00
Administrative Services	97,550.00
Land & Water Acquisition	54,655.00
Boating Safety-Information & Education	91,837.50
Legal Services	3,072.88
Engineering and Development	330,037.61
Maintenance	142,635.00
Law Enforcement Services	730,313.86
Boating Services	239,952.15
Boating Fund — General Operations — Total	<u>\$1,736,639.00</u>
Department of Revenue — Collecting Motorboat Registration Fees	254,894.82
Department of Transportation — Delaware River Navigation Office	18,670.69
Department of General Services — General State Authority Rentals	1,984.86
Treasury Department — Replacement Checks	1,000.00
TOTAL	<u>\$2,013,189.37</u>

Note: Effective September 7, 1976, Act 197 transferred all activities and responsibilities of patrol boat operations of the Delaware River Navigation Office to the general operations of the Boating Fund, Pennsylvania Fish Commission. All items stated in this financial report in re Delaware River Navigation Office relate to transactions occurred July 1 to September 6, 1976, and include snagboat operations which were assigned to Department of Commerce on the effective date of this Act.

PENNSYLVANIA FISH COMMISSION
CLASSIFICATION OF EXPENDITURES & COMMITMENTS
(incurred July 1, 1976, to June 30, 1977)

	Charged to FISH FUND	Charged to BOATING FUND	Combined Funds Expenditures & Commitments
PERSONNEL COSTS:			
Salaries and Wages.....	\$4,641,931.17	\$763,711.22	\$5,405,642.39
State Share — Employee Benefits	1,254,286.57	168,752.46	1,423,039.03
Travel Expenses.....	97,097.26	24,786.18	121,883.44
Purchase of Uniforms, Clothing, Footwear	35,818.18	10,610.25	46,428.43
OPERATING EXPENSES:			
Fish Food.....	656,705.79	-0-	656,705.79
Utilities (Heat, Water, Electricity)	337,781.34	9,187.60	346,968.94
Printing	191,612.44	95,188.36	286,800.80
Vehicle Maintenance — Gasoline, Oil, Repairs, etc.....	228,727.46	39,551.84	268,279.30
Payments to Other State Agencies for Services Rendered	194,428.99	59,829.12	254,258.11
Machinery and Equipment Repairs and Building Upkeep	113,449.27	34,521.04	147,970.31
Other Supplies (Educational, Office, Laboratory)	72,790.10	33,555.65	106,345.75
Telephone Expenses.....	76,757.01	29,497.01	106,254.02
Maintenance of Fish Commission Buildings and Grounds	71,243.01	15,910.14	87,153.15
Rental of Buildings for Offices and Storage	58,443.77	27,089.02	85,532.79
Consulting Fees for Research, Land Appraisals, etc.	40,934.19	15,236.58	56,170.77
Postage.....	42,688.14	13,136.46	55,824.60
Maintenance and Rental of Office, Xerox, Tabulating Equipment.....	36,437.70	7,492.99	43,930.69
Insurance-Liability, Surety, etc.....	22,784.61	9,329.00	32,113.61
Grants to Outside Organizations for Research or Services.....	10,600.00	-0-	10,600.00
CAPITAL INVESTMENTS (Purchases):			
Purchase of Passenger Vehicles, Trucks, Powered Boats.....	187,859.38	43,167.02	231,026.40
Access Area Development and Improvements to Lakes & Streams.....	7,861.32	185,544.18	193,405.50
Consideration Costs of Lakes and Streams Acquired	127,395.00	54,655.00	182,050.00
Building Improvements to New and Existing Structures	56,073.35	50,416.05	106,489.40
Machinery and Equipment for Fisheries Management, Hatchery Operations, and Land Improvements.....	92,389.51	-0-	92,389.51
Other Equipment — Office, Scientific, Aquatic	35,038.90	45,471.83	80,510.73
Pa. Fish Commission — General Operations — Total.....	\$8,691,134.46	\$1,736,639.00	\$10,427,773.46
Collecting Motorboat Registration Fees	-0-	254,894.82	254,894.82
General State Authority Rentals	62,132.87	1,984.86	64,117.73
Delaware River Navigation Office.....	-0-	18,670.69	18,670.69
Treasury Dept. — Replacement Checks	1,000.00	1,000.00	2,000.00
TOTALS.....	\$8,754,267.33	\$2,013,189.37	\$10,767,456.70

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

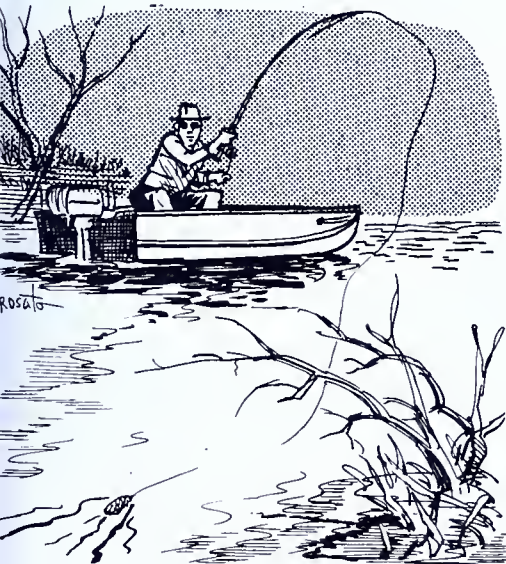
FISH FACT: It is not just the temperature of overly warm water that makes fish listless—oxygen content declines as water temperature rises. In fact, the oxygen can become so depleted that fish become ill and in extreme cases die.

If you shun wire leaders and swivels and tie the lure directly on the monofilament line in fishing for pickerel and pike, a word of caution: Cut off at least six inches of the line and retie the lure after you catch one of these toothy fish. These teeth may not actually sever the line, but they frequently chafe and weaken it.

No angling kit is complete without a selection of weedless lures and some weedless hooks for bait fishing. Weedy spots harbor good fish. So do places where brush has fallen into the water. And it is tough fishing such spots with unguarded points.

To make a bass fly rod leader, get three coils of leader materials, one of ten pounds test, one of eight, and one of six. Use a three-foot piece of the ten pounds test to make the butt of the leader, a three-foot piece of the eight pounds test to make the center section, and a three-foot piece of the six pounds test to make the tippet.

Branches of fallen trees or heavy brush, standing above the water level, are bass targets. Usually masses of limbs or vegetation exist under the water surface, and there is where the bass lie. Cast as close as possible to the stick area or throw a weedless lure right into the mess. If you do not get hung up occasionally, you are not getting your lure close enough.



Rocket taper and weight forward lines are an abomination for casting short distances. The heavy end of the line is heavy enough that the angler working at close range is actually fishing entirely with the heavy section. Lines of these tapers are intended for long-distance casting with wind-resistant lures, when the heavy end of the line will carry the lure 50 or 60 feet.



A hooked bass leaps into the air in an effort to free itself. What to do? You can give the fish slack line, so that it has no direct pull; you can tighten the line hard to pull the fish off balance. Or (and this is a tough one) you can put the tip of the rod down into the water and reel fast, to block the leap.

Hooks equipped with weedless devices need a quick and hard response to set the hook on a strike.

Winter is the time to make repairs on your fishing tackle and to store up replacements for lures and gadgets that have worn out or been lost. Such a task is also a delightful way to use spare time between fishing seasons.

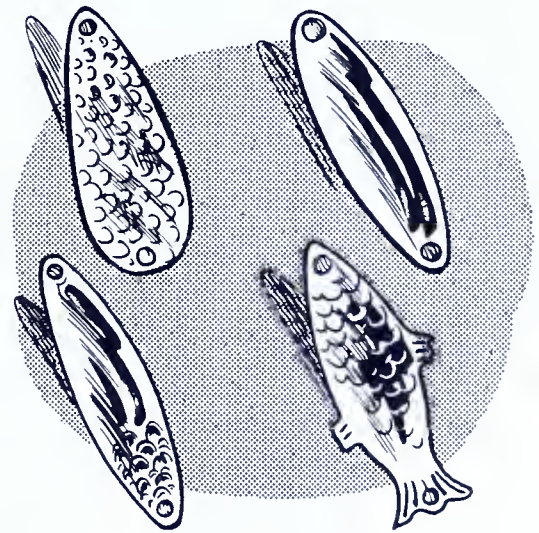
Learn to use plastic worms. They were designed basically for bass fishing, but they also will take pickerel, northern pike and walleyes. Usually they are fished on bottom, but they also are effective over weeds that grow deep. Small worms are more easily handled, and it also helps if they have weed guards on the hooks or are rigged with the hook point buried in the body of the worm. Plastic worms that float are effective in shallow water.

Rust is the penalty for letting metal lures and other fishing tackle remain wet for long periods. Don't store tackle away while it is wet. Expose all metal to the air and let it dry thoroughly. Particular attention must be given to lures dressed with hair or feathers, since these materials hold dampness longer.

Too much oil on fishing tackle can do more harm than good. A single drop of light oil is enough for the bearings of a casting reel. A cloth that has been saturated with oil should be used to lubricate the working parts of a single-action or spinning reel and the shafts on which spinners revolve.

Leader sink hard to find in your local store? Make your own by working liquid detergent and soap powder into a paste.

Bass plugs with propellers attached should not often be moved over the surface at a steady pace. On well-made plugs the propellers turn with the slightest twitch of the rod. The best method usually is to retrieve the lure with gentle twitches and short draws to make it look like a injured and struggling minnow.



Never go pickerel, pike or bass fishing without some spoons. These lures, which are made in a large variety of sizes, shapes and colors, are the best imitations of minnows and other forage fish ever made. They can be fished shallow or deep, slow or fast, or with a steady or erratic retrieve. Some are equipped with single hooks, often weedless, and others with treble hooks. Incidentally, tiny spoons will take big trout.

(more "notes" on page 32.)

Hewitt's Venerable Skater

by Chauncy K. Lively

photos by the author

Few men have been more influential in the development of fly fishing in America than the late Edward R. Hewitt. During a long life, devoted mainly to angling and matters piscatorial, he made many contributions which ranged from progressive ideas about tackle to new philosophies of fisheries management, a field in which he often acted as a consultant. His camp on the Neversink River in the Catskills was his proving ground and it became a veritable laboratory for his many brainchildren.

The Bivisible was perhaps Hewitt's best-known dry fly but close behind was the Neversink Skater. Skaters belong to the long-hackled spider/variant family of dry flies but they display some distinctive features which set them apart from the others. All have hackles with barbules at least twice the length of the standard specified for dry flies of a given hook size. Strictly speaking, true variants have short, stubby wings while spiders have none. Spiders may or may not be dressed with tails; but, like variants, generally sport bodies of floss, fur, quill or tinsel. On the other hand, the Hewitt version of the skater may be termed a tailless, bodyless spider, bearing only hackle wound at the

midpoint of a small, regular shank hook.

It was many years ago when I first read about the Neversink Skater and I was frankly skeptical that it could ride upright without falling over on its backside. But it wasn't long afterward that I had an opportunity to watch Russ Malone use this type of fly on the Lackawaxen River and I promptly became a believer. As Russ so effectively demonstrated, the skater does sometimes alight flat on the water but it is easily pulled upright with a gentle twitch of the rod tip, after which it rides beautifully. Once upright, the points of the vertical barbules penetrate the surface and the hackle literally secures a toehold in the film, with the tension of the leader stabilizing the fly's posture.

The Neversink Skater is an extremely light, high-riding fly and Mr. Hewitt found it most effective when skittered across the surface in short strokes, hence its name. On windy days, particularly when a steady downstream wind is blowing, the Skater may be used to advantage with a light line and long leader. The trick is to stand upwind of a likely pocket, holding the rod tip high to allow a minimum of line to touch the

water. The wind will do the rest, lifting the fly off the water and dropping it like thistledown. By changing the rod's angle the fly may be made to dance over several likely spots from a single position. Greasing the entire leader is an aid in this kind of fishing because even a partially submerged leader will inhibit the free action of the fly. It is almost like dapping, with the wind acting as the angler's ally. The Skater is also effective when fished dead-drift, particularly on high water when trout are normally difficult to raise to the dry fly.

Skating a long-hackled dry fly across the surface places demands on the hackles not ordinarily required of conventional flies and particular attention should be accorded both the selection and application of the hackles in the Skater. The best hackles for this purpose are the spades, the short, long-barbuled feathers found along the edges of a cape. Most hackle feathers are slightly concave on their dull sides and this characteristic is used to advantage in the Skater. Using unwaxed thread, preferably nylon, the two hackles are tied in and wound with concave sides facing each other. They are then pressed firmly together and the result is a rigid unit with the two hackles supporting each other.

The Honey Skater was Mr. Hewitt's favorite for the Green Drake hatch and he used it with great effect on Spring Creek near Bellefonte. Other useful colors are black, brown and dun. There is a short movie, available to sportsman's clubs, entitled "Hewitt and the Neversink", which shows the old master at work. In his characteristic, hunch-shouldered stance, he fishes his Skater below a dam and raises some of the most awful leviathans imaginable. Some he lands; others he breaks off, scratches or misses and each time he comes up empty you can see an "expletive deleted" curl from his lips. But the reaction of those big browns to his Skater is enough to raise the hackles of the most blasé of dry fly fishermen.

Dressing the Skater:

Left — Select two spade hackles (your choice of color) with barbu-les of a length to produce a fly of half-dollar diameter.

Right — Clamp a size #16, regular shank hook in vise and tie in unwaxed nylon thread behind midpoint of shank.



Left — Tie in rear hackle perpendicular to shank with concave (dull) side facing eye. Bend stem toward rear and bind along shank with three turns. Bring thread forward of hackle about 1/8" and bind front hackle with concave side facing rear hackle. Then bend stem forward and secure along shank with three turns. Move thread to rear of front hackle and trim off excess stems.

Right — Wind rear hackle in close turns to rear of front hackle and tie off. Trim off excess hackle tip and wind thread forward of front hackle.

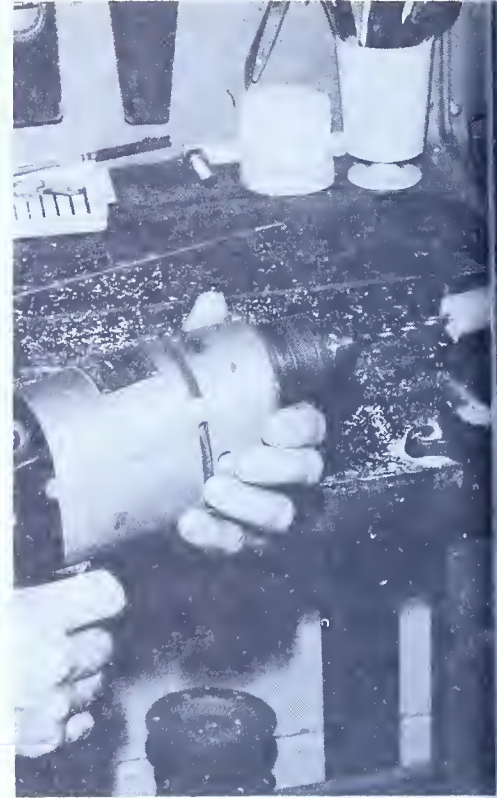


Left — Wind front hackle and tie off behind eye. Trim off waste hackle tip and half-hitch thread.

Right — Press hackles firmly toward each other.

Below — The compressed hackles should now be positioned near midshank. Then wind thread to eye, whip finish and remove unused thread. Finally, after applying head lacquer to finish windings, the Skater is completed.





Cut off a 10 to 12-inch piece of broom handle, top left, for the hand grasp of the ice fishing rod. Then, file or sandpaper the edges smooth, top center. Drill a hole about 4 inches deep down the center of the handle, top right. The hole should be just slightly larger than the butt section of the rod tip. Before gluing, check rod tip section for fit in hole, left. Apply glue to butt of rod tip and down into hole in handle. Finally, insert tip into hole, right.



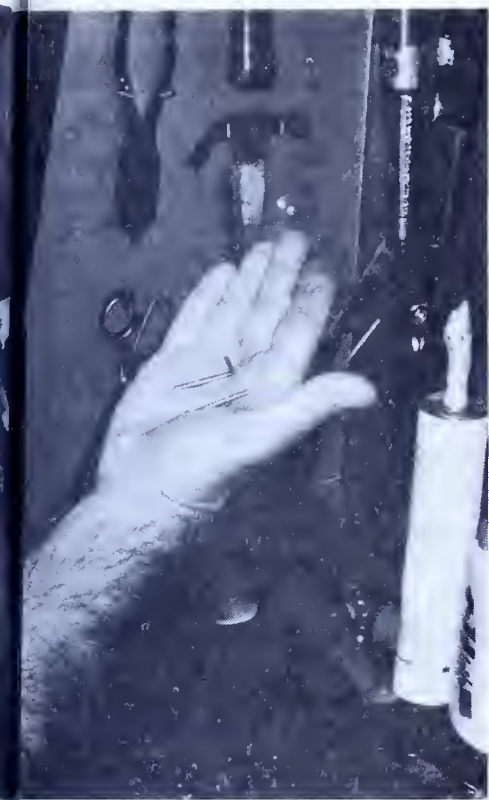
Make your own **ICE ROD** by Gerald Almy

If you're like most anglers, over the years you've accumulated a motley assortment of odds and ends of useless fishing tackle: broken rods, malfunctioning reels, plugs minus a treble hook, bobbers too big to be of use, fishing line heavier than you ever use, plugs and spoons that never drew a strike in their ignoble lives. If you have a spare rod tip among these odds and ends that doesn't match any butt

sections, or one that has been discarded as you stepped up to higher quality equipment, it's possible to make a top-notch ice fishing rod from it for just a few pennies.

Materials needed consist of a piece of discarded broom handle or a dowel, the spare rod tip, a pair of L-shaped screw hooks for line holders, and glue.

First make the hand grasp for the rod. A broom or mop handle works



"L" shaped screw hooks, top left, can be used for line holders when fishing for small fish. To install screw hooks, drill two small holes to start the threads, top center. Hooks should point in opposite directions to hold line, top right. If big fish are a possibility, you'll want to allow them to take out line when making a run. An old reel can be taped on with electrician's tape, left. At right is shown the completed ice rod, ready for action.



excellent for this. Cut off a 10- or 12-inch section of the pole and file or sand the edges smooth. Drill a hole in the end of the handle, barely larger in diameter than the butt end of the rod tip, approximately 3-4 inches deep, to fit the butt of the rod tip into. (The male ferrule on the rod tip can be removed, if you prefer.) Squeeze glue in the hole and on the butt of the rod and force the rod snugly into the

handle.

There are two choices for finishing the rod. The first one should be employed when there is a possibility of hooking large fish where you may need to pay line out to keep them from breaking off. This involves simply fastening a reel to the hand grasp with electrician's tape. This will hold the reel securely in place.

If you are just fishing for panfish or

small trout, two L-shaped screw hooks, which sell for about 7c each, can be added to the upper part of the rod handle. The 1½-inch size is best for most rods. Simply drill two small holes to start the threads and screw in the hooks so that they end up pointing in opposite directions, 3-4 inches apart. Line can then be wrapped around the hooks for storage while not in use.



When purchasing a new boat you can save a good deal of money, says the author, by adding those optional accessories yourself—later on.

Ashore & Afloat

by Gene Winters

The fact that inflation and unemployment continue to plague the country will turn few heads. If you're tempted to say, "Oh, no, not another gloom and doom story," hang in there. I may be able to find a couple of rays of sunshine if you're wrestling with the decision about buying a new boat.

I wanted to get a better understanding of the degree to which the nation's economics were affecting the boating industry and the public. To this end, I spent many hours this past fall making the rounds of marine dealers, marinas, trade shows, and visiting boat manufacturers, including two here in Pennsylvania.

Dealers reported most of any 1977 sales decline came mainly in the high ticket merchandise — the big vessels normally acquired by companies and corporations, or the very rich. Many dealers are convinced the day of countless sales of 65-foot yachts to business has peaked and is definitely on the way down. While manufac-

turers discount this, and it's hard to dispute them when you see the big ones rolling off their production lines, the corporate profit squeeze is on and, more importantly, recent changes in tax laws and IRS interpretations of business expenses have started an irreversible big ticket sales slump.

There was also some sales decline at the other extreme: rowboats and johnboats had slipped (an exception was canoes, which increased in sales). Popularity of boats in the 16-21-foot range continued, tainted only by pockets of unemployment and lack of financing capital for buyers. In many cases, the same dollars were being spent but shoppers had to scale down from weekenders and daycruisers to windshield-wrapped runabouts in some cases.

On the average, it appears the smaller of the small boats are increasing about 10-15% a year in cost. Percentage of increase on larger vessels, in the 32-45-foot range is a lot harder to determine. I know a couple who had a new (ten-month-old) 32-footer that caught on fire and was destroyed. When they went to replace it, they found the same model price had increased over three thousand dollars. But that was only part of the story. The manufacturer, because of increased production and labor costs, had changed almost two thousand dollars worth of accessories from standard to optional at extra cost. So, keep a close eye on the price tag on the boat of your dreams and the other eye on the list of standard features in-

cluded in the base price. Both can change overnight.

Several years ago, I knew a fellow who got all excited about an ad for a boat in the 26-30-foot range selling new, in fiberglass for *under* ten thousand dollars! He got *me* excited, too, and we both started really thinking . . . no, *dreaming* about this boat. Finally, unable to resist its lure any longer, he took off one day, direct for the factory. I have never seen a man more discouraged and disillusioned than he when next I saw him. The boat, advertised at more than five thousand dollars less than comparably sized vessels, was available for under \$10,000. However, that price did not include an engine, which was a \$4000 powerplant optional extra. And, even more astonishingly that price did not include the fiberglass finish, the gel coat! Supposedly this was to allow a customer to select hull and interior colors, so long as they were chosen from (only) three the manufacturer made available. Within three months of the first appearance of the \$10,000 ads, there was a price increase of five thousand dollars. (Did the Federal Trade Commission or a governmental agency enter the picture?) For the new, increased price, I don't know if you now got the finished gel coat or not. I was no longer interested in this company at any price.

It is no secret, however, that even reputable manufacturers are tearing their hair out trying to save a buck. But, then, who can blame them . . . aren't we all? Years ago, when boatbuilding was a one-man business, pride of workmanship took the sting out of unrealistically low profits. Today's boatbuilder is more often than not a college educated executive who, while still intent on quality, is determined to be paid for workmanship and quality and still turn a fair profit. He may be housed in a corporate office in Dallas, New York, Seattle, or Miami — hundreds of miles from the plant — but he is trying to keep the lid on spiraling prices to minimize customer resistance while maintaining quality. He is demanding and usually getting more efficient production. Automation, new materials, improved techniques, and new approaches are proving largely successful.

On the other hand, there are new

boats at work, not necessarily evil, but are playing havoc with the best of intentions. Soaring corporate liability premiums because of recent regulations and interpretations of product liability are approaching the percentages that doctors now face for malpractice insurance. Workman's compensation rates are increasing; in some places to unexplainable highs. Environmental requirements, noise abatement programs, worker contamination exposure policies . . . adding up at a rate that makes a calculator blow a fuse.

While I said all the news in this article would not be grim, there is going to be a point where all the best management, technology, new materials, and intentions in the world will simply not be able to hold the line. While last year's price increases followed the average 10% inflation rate, the overall price increase in the last four years was about 20-35%. A new round of petroleum price increases (of which fiberglass and plastics are a by-product), whether brought about by the oil cartel, the producers, the government, or simply supply and demand, would be reflected almost overnight on the marketplace.

All of which brings us around to the old axiom, "You oughta buy now." During the cold months of winter, if you can find a boat that meets your dreams and fills your needs at a price you can live with, better snap her up. You'll probably save at least ten percent compared to spring's prices for the same model. If you're shopping in the five to ten thousand dollars class, that amounts to five hundred to one thousand dollars in savings for moving now. In addition, many dealers offer substantial discounts during the cold months in order to generate some cash flow.

I had lunch recently with a national sales manager for a boat manufacturer. During our "don't quote me by name and company" conversation, he explained that few prospective boat buyers of smaller size vessels, in the 6-26-foot range, consider *ordering* a boat with or without the features and accessories they've determined appropriate — they tend to buy right off the showroom floor. This is fine, he pointed out, if they get what they find at the right price. Buyers of larger

vessels usually *have* to order as few dealers have the space or capital to carry every model of every make they merchandise.

At the time the order is written up, most boaters are swept away as the dealer runs through the list of available (at extra cost) options and apparently can only say "yes". Many times these options are not needed or necessary to operate the boat properly or safely; and, they could be added later, at less cost, payday by payday. Look at a typical price list of options. See, for example, how much such-and-such make compass sells for — manufacturer-installed. It may be \$45; but, sitting on the dealer's shelf is the exact same compass priced at \$23 — not installed. Buy it from the dealer and install it yourself and save almost fifty percent.

It's not that the manufacturer of the boat is out to rob you, it's just that he has to pay a skilled worker (and don't forget fringe benefit costs, insurance, etc.) to install it. A worker that could be helping to produce a twenty thousand dollar boat is installing a compass that sells for under twenty-five dollars!

"What I'm trying to advise without saying it," my contact summed up, "is: don't buy expensive options from me that you can buy cheaper and easily install yourself." His theory, he went on to explain, is any item that can be installed or put on a boat with screws, nails, or adhesive *after* the boat is manufactured and delivered, should not be ordered from the manufacturer. "Unless it must or logically should be installed as the boat is being manufactured because of an access problem later, buy it from the marina or a discount mail order house."

I wasn't really about to let him off the hook after that last remark so I politely grabbed his jacket as we arose to leave.

"Discount mail order?" I looked him squarely in the eyes. "Isn't that hitting a little below the belt with your dealers?"

It was his turn to pause for a moment.

"Not really," he replied. "Sometimes it means the difference between making some kind of a sale or none at all. The amount of financing money available may restrict the buyer. Take off some of the goodies (for him to add

later) and you may make a few bucks and really help him at least get the boat he wants. In other words, for both parties, a piece of the pie may be better than no pie at all: Besides, the manufacturer is really not all that interested in selling fire extinguishers, compasses, toilet holders, and so forth."

I questioned him immediately about the fire extinguisher inclusion; his reply was to the effect that the small size and capacity placed aboard and universally accepted is woefully inadequate for a fire on board a boat . . . a fact that is hard to challenge. "A manufacturer," he continued, "makes many items available only for convenience, regulatory reasons, appearance, or to deliver a total concept boat package. But a manufacturer has to sell a lot of cigarette lighters, at any price, to make the same amount of return on his investment as he'd get doing what he set out to do: build boats. "As far as buying discount, some dealers and manufacturers alike appear to try to make a killing on each item. Maybe the buyer is, for this reason alone, justified for going discount whenever and wherever he can, mail order or otherwise. Besides, the manufacturer and dealers, if they are any kind of business people at all, buy where *they* get the best price consistent with quality and service. Why should the consumer be expected to seek any less? Why must he, alone, be made to feel like a third-class citizen if he tries to save a dollar legally?"

I left the restaurant and headed home. As I drove, I tried to sort through the sales manager's remarks. To a large extent, they made sense. Yet, I thought, if this is truly the feeling in the industry, why was he so insistent on remaining anonymous? But it was hard to deny, if a prospective boat buyer took the list of available options, scanned it with an eye towards the unneeded items, or those he could purchase and install himself, it just *might* be possible to save hundreds of dollars! And, if he bought right now, in midwinter, and saved another five hundred or so. . . .

It couldn't be that simple, I assured myself. It just couldn't be that easy to save hundreds or thousands of dollars on buying and equipping a new boat . . . or could it?

Northcentral Region Supervisor Miles D. Witt Retires—



After 22 years of service in a variety of assignments, Miles D. Witt retired from Commission service October 21, 1977. Mr. Witt began his service as the Commission's district officer for Bucks and Northampton Counties in 1955.

One of the pioneers in float stocking of trout in Pennsylvania, in 1963 Miles Witt personally built one of the first float boxes to be used in his district, beginning a system of trout stocking which has gained more favor each year with Keystone State fishermen.

Promoted to Assistant Regional Supervisor of the Southeast Region in 1966, then Supervisor in 1967, Mr. Witt served there until the present Northcentral Region was established in 1973. He had served as Supervisor of the latter Region until his retirement.

Assistant Supervisor Paul F. Swanson Assumes Post—



Paul F. Swanson, a 1967 graduate of the Fish Commission's H.R. Stackhouse School of Fishery Conservation and Watercraft Safety, was appointed district officer for Centre County, serving later in that same capacity in Western Erie County.

In 1971 Mr. Swanson was promoted to Watercraft Safety Officer for the Commission's Northwest Region, a post he held until promoted to Assistant Supervisor of the Northcentral Region in 1973. Very active in stream improvement and restoration, Paul Swanson's writings on the work done on the streams of northcentral Pennsylvania have appeared in the *Angler* on a number of occasions. He assumed the supervisory post upon Mr. Witt's retirement.

More . . . Angler's Notebook (continued from page 25.)

A plug or fly rod lure begins working for you the instant it touches the water, so never be in a hurry to work a surface lure out of a likely looking spot. Bass often hit lures lying motionless while an angler lights a smoke or works out backlash on a casting reel.

Fish hit hard, but monofilament spinning lines stretch; so, strike hard once or twice to drive the hook past the barrier into the flesh of the fish.

Matching rods, lines and lures is important for successful spincasting. Ultra light rods are designed to handle lure weighing one-sixteenth to one-quarter ounce; medium action rods, lures of one quarter to one-half ounce, and heavy duty rods, lures heavier than one-half ounce. And, the lighter the lure, the lighter the line that must be used with it.

Too many bass anglers ignore streamers although they use artificial lures of other types. Streamers imitate minnows which are one of the favorite foods of bass.

A guide for spinner sizes: No. 0 for panfish, No. 1 for brown and brook trout, and No. 2 or No. 3 for rainbow trout and bass.

Cast after cast can be made with a plastic worm into the same target area because the worm makes very little disturbance when it falls on the water and when it is being retrieved. It may be good tactics to make only one cast with a plug at a particular spot before moving to another, but with the plastic worm three or four casts can be made in the same area, and a strike can come on the final cast.

Two good times to study streams: Late summer, when the water is low and the "structure" of the stream can be easily seen; and spring, when the marks of winter can be observed.

New patterns and types of trout flies appear in great numbers, but the angler should not forget old friends. Such faithfuls as the Coachman, March Brown, Hare's Ear, Quill Gordon, Pink Lady, Yellow Sally, and Hendrickson, to list a few, still are powerful trout attractors.

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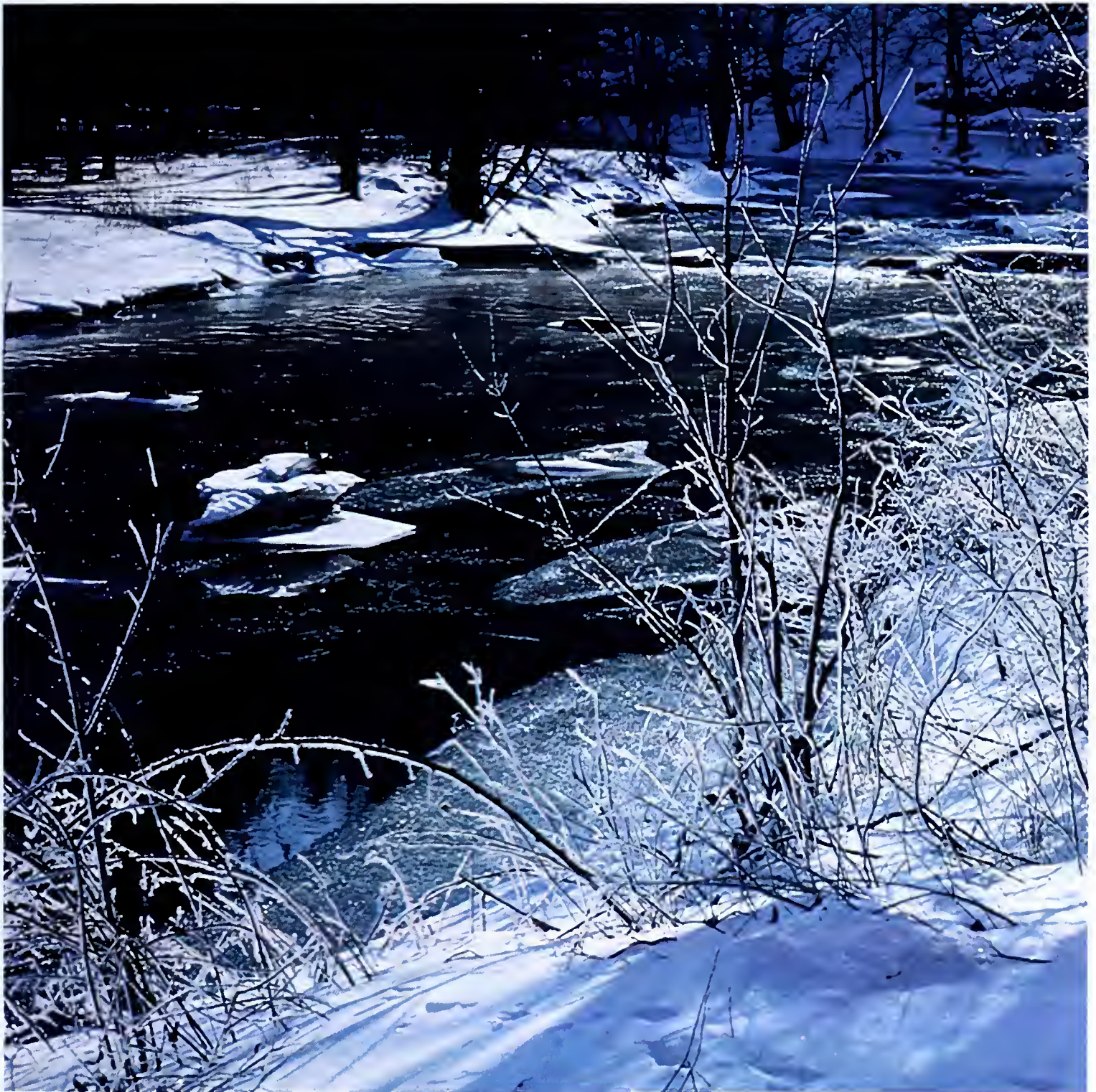
FEBRUARY—1978

PENNSYLVANIA

Angler

the
**Keystone State's
Official
FISHING·BOATING
Magazine...**

3
Single Co





OPEN SPACE —

More often than we personally like it, we are forced to spend considerable time in packed cities. Only so many days of this can be tolerated by those who were raised in the outdoors and cherish their precious hours in the world as the good Lord made it.

There is a hustle and rush and impatience in urban areas that eventually crosses the threshold and the buildings and the people seem to be closing in on you.

Granted, a decent number of city dwellers do escape for precious hours, but it seems that the bulk of humanity is satisfied without the things they know nothing about. If and when crowding actually seems to be a problem for them, they can invoke their super technology and now, with the exploration of outer space, it is probable that there are theories and projects being considered to move segments of the population out into other planets or man-made, self-contained terraria orbiting in space.

The trouble with this idea is that man has never been able to come up with a self-perpetuating ecosystem on any scale and to believe that he can do this on a worldwide basis is pure dreaming. We must come to the understanding and admission that there are great sections of the earth and its waters which need to be kept in some semblance of their natural condition. No city is self-supporting and for cities to survive there must be vast areas near and far that produce food, water, energy, fiber and a whole mixture of other necessities. When we delineate only those uses for those environs, we in no way want to leave out open space as a necessity for outdoor recreation.

The Fish Commission has to take stands that quite often sound "anti-progress." If you agree with any premises above, you understand that there has to be a limit in the growth of populations, road building and industry and, as Dur Allen says, "When the chips are down, we must take an uncompromising stand and say for us and for those who do not yet speak for themselves — this we want; this we need; this we are going to keep."

Ralph W. Abele,
Executive Director

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

Published Monthly by the
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February, 1978

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On the covers — Winter can be dull, drab . . . or a source of joy and renewal . . . it's a matter of your personal point of view. Staff Photographer Russell Gettig captured some of the beauty of winter to be found along our Keystone waterways.

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James F. Yoder, Editor

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APPRECIATIVE —

If there is any magazine that helps a new fisherman learn to catch fish, it is the Angler. I would also like to thank all the waterways patrolmen that give of their free time to provide schools to help a person catch fish. They deserve recognition for all the hard work they do. When you hear a man like Waterways Patrolman Lee Shortess tell of the happy times he's had, you know what fishing is all about.

Enclosed is a check for the book "Techniques of Fly Tying & Trout Fishing." I'm not new at fly tying, but I know the Fish Commission can help even a veteran angler.

JOSEPH J. GOLDA
Marion Heights

RIGHT TO THE POINT!

Upon seeing your article about The Giant Stone Fly in the issue of the Angler which I received this afternoon, I couldn't help noticing how the hook was clamped in the vise. That hook is held so that the barb is not showing. I have always been under the impression that when a hook is held in this fashion, the vise does to the hook what is known as "cracking the temper." This is caused by excessive pressure placed on the base of the barb (a swelling caused by the tool that cuts the barb into the hook) resulting in a point which easily breaks off. Is this true?

JOHN C. BREWER
Malvern

When tying smaller flies (those on hooks #18 and smaller) Mr. Brewer might have a point (no pun intended). Too much pressure exerted on these hooks while tying will cause the hook to break at the point or the bend. However, I think the advantages of covering the hook completely far outweigh the disadvantages. First and foremost, when the point of the hook is exposed many fly tiers break the tying thread on this sharp point while attempting to tie in the tail and body of the artificial.

Finally, two authoritative texts upon which I rely also indicate that the point should be covered. George Harvey, a

renowned fly tying expert writes as follows in *A Simplified Course in Fly Tying* reprinted from the Pennsylvania Angler. On page 4 of the reprint, George says:

"Hook should be placed in vise so the point of hook is covered [my italics], allowing as much clearance between the top of the vise and the shank of the hook as possible."

Another book of note is the *Noll Guide to Trout Flies*. On page 40 of this book the writer gives the following directions: "Clamp the hook in the vise so that the jaws clamp completely over the barb and the small part of the bend of the hook [my italics]."

Sincerely,
Charles Meck

STARTING YOUNG!

I read with great interest the article by Ken Hassler on keeping minnows (July). I have been doing this for quite some time. I keep a 10-gallon aquarium in my basement. I have a filter and an aerator run-

ning all the time. No heater is needed. With the high cost of bait in the area it has been quite a savings to me. I also keep crayfish in my aquarium. They are excellent scavengers and help keep the tank clean. They also came in very handy for bait.

My three-year-old daughter Tracy comes with me to the Neshaminy Creek and helps me collect minnows. I go downstream muddy-up the water and put in my seine. Then Tracy runs downstream chasing the minnows into the seine. She really enjoys helping me catch bait. She also loves walking around in the creek turning over stones, sticks, etc. looking for crayfish. She won't touch them but she sure can find them. There's no greater way to get a little girl to learn about nature and have fun while doing it. At three she's a bit too young to have the patience to spend long hours fishing, but catching bait keeps her constantly with something to do. It is also a great father/daughter activity and I recommend it highly.

JACK PERR
Doylestown

CHIT CHAT

Mr. Donald Downs, Editor
Journal of the Flyfishers' Club
43 Brook Street
London W1Y 2JL, England

Dear Mr. Downs:

In the correspondence section of your "Volume 65, #249, Winter 1976" issue, I found Mr. Graham Shorrocks' letter quite amusing in view of the "words and phrases used by anglers in different parts of the country."

The amusing aspect is my personal knowledge of words and phrases used by our American fishermen — especially when a favorite fly or lure becomes hopelessly entangled other than in the jaw of a fish!

May we have permission to reprint this letter in our state publication, *The Pennsylvania Angler*?

I might add, too, that your Journal is much appreciated and read by a good number of our staff.

Sincerely,
James F. Yoder, Editor
Pennsylvania Angler

FROM O'ER THE WAVES...

Dear Mr. Yoder,

Many thanks for your letter of 17th August which arrived last week.

I've been in touch with Graham Shorrocks and he will be delighted to have his letter printed in *Pennsylvania Angler*. I assume that some of your readers who have 'words' to 'impart' will write directly to him?

No doubt he is at present wallowing in, snaggings, castings, loops, bends, hackles, gimps, whippings etc., etc., I hope that he doesn't get his leg pulled... he sounds a rather serious young man from his letters to me.

THE MEAD,
HOSEY,
WESTERHAM,
KENT TN16 1TA.

Thanks to the persuasive Waterways Patrolman, Bob Steiner, Luzerne County, I am back on the mailing list of the Pennsylvania Angler.

The July issue has to rank with the all-time great issues that were published over the years. Specifically, the article on the Pennsylvania Bass Anglers Sportsman Society (BASS).

I have been a member of BASS for the past five years and, believe it or not, my catches of largemouth bass have increased immensely, I was recently given the opportunity (by the Pennsylvania Fish Commission) to display my mounted "lunkers" at the Fishing Expo held in the Armory in Nanticoke, Pa. These Pennsylvania "Hawgs" are 6 lb. 1 oz., 6 lb. 4 oz., 6 lb. 7 oz. and 7 lb. 1 oz. The beauty part is that they were caught within twenty minutes of Nanticoke. I have caught and released six limits of bass in 1975 from Moon Lake on the outskirts of West Nanticoke. Prior to that I caught one limit in my lifetime.

Again, many thanks to you for the fine article and a special thanks to Messrs.

Fleeger, Perry, Waterways Patrolmen Steiner and Neifert, Deputy Waiter and the Pennsylvania Fish Commission for allowing my display. It was an unforgettable experience.

Luzerne County
JOE MADAY
Luzerne County
Nanticoke

WHERE TO GO...

Enclosed please find my check for one-year renewal. As a new reader, and, third-year fisherman, I find your magazine very helpful in solving the problems we new fishermen face.

One suggestion for you—how about every month explore the fishing opportunities in a different county. This way new fishermen will know just where to go for good fishing.

DONALD BARRY
Cornwells Heights

It's very pleasant to hear that a number of your staff read the Journal; for the last year I've been editing it single handed which has been fun but not easy — you see I'm an architect in Government Service and that takes me away from home for 11 to 13 hours every day . . . and we do get very short of material sometimes — in fact I wrote in one issue under 300 words de plume on top of the Editorial and a Report! However things are improving just at present — I even have some 4 or 5 items for the Spring Number. Such are the trials and tribulations of a Journal that is essentially a Club Magazine!

With very best wishes,
yours sincerely,
Donald Downs.

THE SUBJECT:

SIR,

The Centre for English Cultural Tradition and Language at the University of Sheffield is interested in collecting lists of words and phrases used by anglers in different parts of the country. We are collecting words for tackle, words for bait, words for fish, and words for waters, i.e. anything at all to do with angling — sea, coarse and game. It would be tremendously helpful, and very much appreciated, if anglers would send us details of any fishing words used in their area. Many such words are not in the dictionary, so please feel free to make up your own spellings. The information is required for scholarly research only — there is no profit motive. Please send any words to:

G. Shorrocks, M.A.,
Centre for English Cultural Tradition and Language,
Department of English Language,
University of Sheffield,
Sheffield S10 2TN

Readers of the Pennsylvania Angler with words suitable for Mr. Shorrocks' "scholarly research" might care to correspond directly to him. Ed.

JUST WONDERING—

Dear Pennsylvania Fish Commission:

The address on the card is fine. But I would like to know if the profits made by selling the magazine go to raising and stocking of fish. Not that it makes any difference—just wondering. Thank you.

RICK DACHILLE
Clairton

Nope, we're not supposed to make a "profit." Not that it matters . . . it just works out that way! Ed.

SNAGGED PANTS

Near Carlisle, Pennsylvania, in Cumberland County, at 6:15 p.m. on Wednesday, September 14, 1977, Richard Musselman, Biglerville, Pennsylvania, was fishing with me at Opossum Lake. Richard never dreamed that this was going to be the most exciting fishing trip he ever had experienced. I had my boat, a 14-foot fiberglass, anchored in about 15 feet of water. After putting a Roger's Craw-Pap artificial lure on his line, which was 10- or 15-pound-test line, Richard cast his line to the left of a brush pile about two feet from the bank.

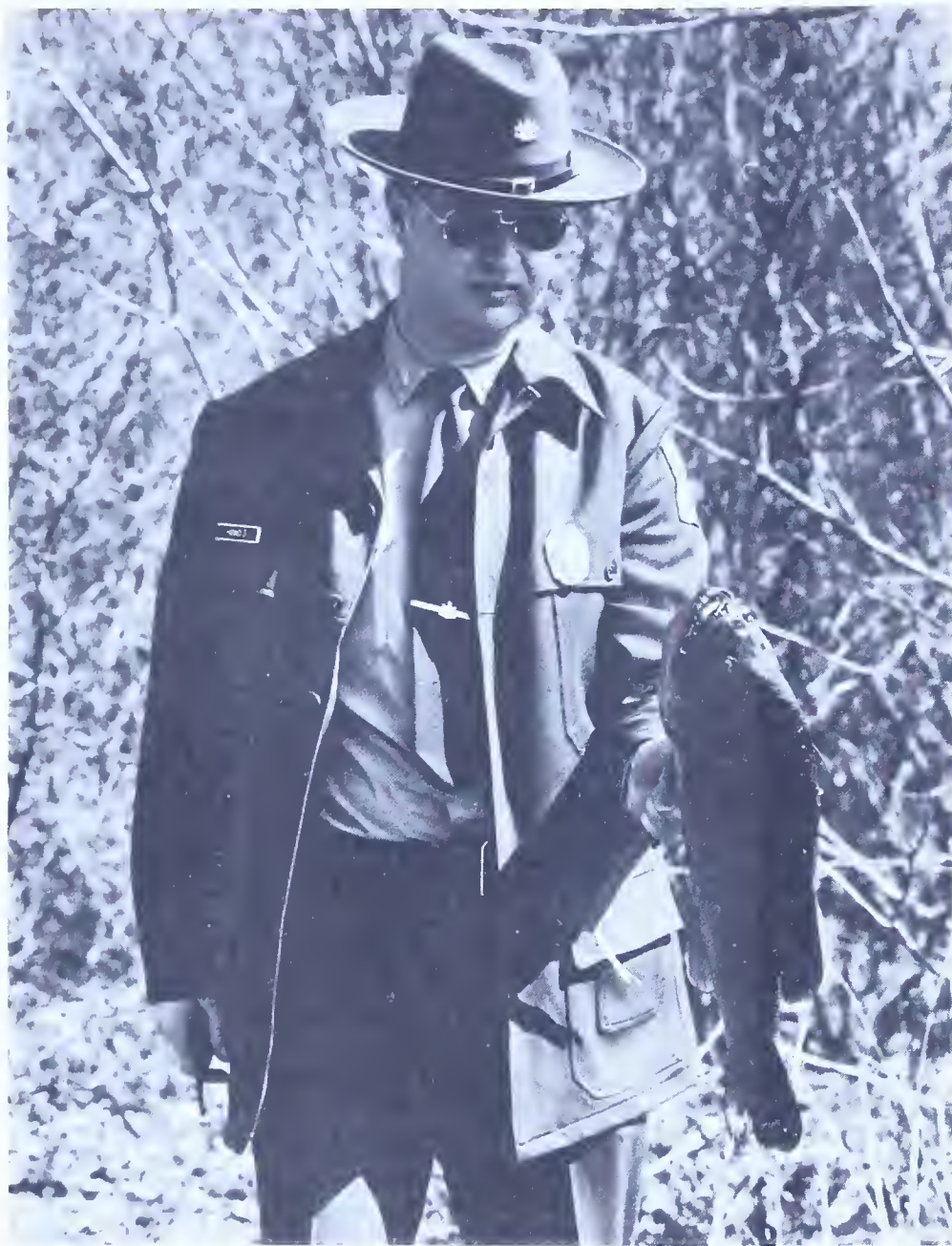
I told Richard that he wasn't going to catch anything at that place and about that time a big musky hit and took off. Within five minutes Richard managed to bring the musky to the side of my boat. I netted the musky and when I almost had the fish in the boat, the musky jumped up in the air out of the net. While the fish was in the air, I had just enough time to get the net under the musky and in the boat.



After we got it in the boat, the musky spit out the lure and flopped from end to end of the boat. Somehow the musky knocked my pole over and I got a sharp pain in the seat of my pants. When Richard finally calmed the musky, I asked him to unhook me and he just laughed and laughed. A father and his two sons in a nearby boat laughed also. Everyone was laughing but me! When Richard finally unhooked me, we weighed and measured the musky. It weighed 16½ pounds and measured 40 inches. Wow! What a catch.

LEROY DALE DICKINSON
Arendtsville

(continued on page 22.)



Winterkill is not uncommon in Commonwealth waters. The naturally occurring phenomenon is never a pleasant sight, especially when gamefish like this 23-inch largemouth held by Waterways Patrolman Terry Hannold succumb.

WINTERKILL
The Dead of Winter

Taking A Closer Look

by Tom Fegely

Fish kills are all too common in this day and age and man's activities are certainly the major cause of most of them. But there is a *natural* kill taking place right now beneath the ice in hundreds of ponds and small, shallow lakes across the state. And there's little that can be done to alleviate the problem. Indeed, in some instances this kill will actually be beneficial, according to biologists who understand the situation.

The phenomenon is more properly called "winterkill."

The whole chain of events which surface when the pond or lake thaws later this month and on into March, may have begun last fall in places where water levels were lower than normal. When cold weather sets in

and ice and snow cover the surface the lake becomes a dark, watery dungeon with little or no light entering. The fish aren't affected too much by the darkness but the many aquatic plants in dire need of sunlight to manufacture their life-giving oxygen become inactive or die. In turn, the lake's animal life is deprived of oxygen and suffocation occurs.

Low water conditions tend to compound the problems of winterkill. Since there is less water in which oxygen can be retained once the water is frozen over, death will result early.

Of course, the amount of vegetation that dies and lies entrapped below the ice also uses some oxygen in the decay process. Combined with the decaying dead fish, the dissolved oxygen approaches the zero level long before the spring thaw frees the lake or pond. At that time, as the ice melts along the shoreline, the dead fish surface

and often cause immediate concern among those who suddenly are confronted with what appears to be a massive fishkill.

Last March such a kill occurred at the East Bangor Dam in Northampton County. The previous January, Waterways Patrolman Terry Hannold and several volunteers had noticed an uncommon gathering of bass, bluegills and other sunfish at the dam's overflow where the surface was ice-free due to the turbulence of the waters.

The group gathered about 6,000 of the oxygen-starved fish in buckets and kegs and moved them to another nearby lake. Yet, another 3,000 fish, including bluegills, crappies, pumpkinseeds and a few bullheads and channel cats floated to the surface — dead with the spring thaw.

Surprisingly, winterkill isn't always bad.

Dick Marshall, a Pennsylvania Fish

Commission biologist, said that in some ponds and lakes "the winterkill situation is a favorable one."

"A proven fishery management process involves the reclamation of an unproductive lake by ridding it of all fish and starting from scratch," Marshall explained.

"If such a lake suffers a severe winterkill we can restock the kinds and numbers of fish we want right away."

Even in properly balanced waters, Marshall further explained, severe winterkills sometimes necessitate the restocking of more fish. In other instances this is not necessary because sufficient seed stock remains and the lake continues to produce a good plankton population. This means more food for the survivors and for a period of time the lake becomes ultraproductive and the fish grow very rapidly.

If fish such as bluegills and bass die, those that make it through the oxygen

deprival period can usually re-establish themselves. Should the victims be hybrids, such as tiger muskies, however, they must be added anew as they are sterile and unable to naturally produce their own kind.

Though the sight and smell of thousands of rotting fish may seem a sheer waste to an angler viewing the situation, it's interesting to note that very little really goes to waste in nature. The East Bangor kill attracted dozens of herring gulls for the easy pickings as well as raccoons, opossums and skunks whose tracks were seen along the shoreline.

Though the thousands of fish that succumb to this unusual act of nature each winter all across Pennsylvania may cause some alarm locally, the end result is only a minor problem. Of much deeper concern are the hundreds of thousands of fish that fall victim to man's abuse and carelessness at all times of the year.

"Though the sight and smell of thousands of rotting fish may seem a sheer waste to an angler viewing the situation, it's interesting to note that very little really goes to waste in nature. The East Bangor kill attracted dozens of herring gulls for the easy pickings."





Ice fisherman are great innovators. Lake Marburg angler Hugh Armstrong, of York, sits comfortably on his tote bucket that holds all of his ice fishing gear. Rod holders resemble those on the bumpers of buggies of surf fishermen who use them to carry rods much longer than these!



Using an old fly rod handle for starters, an ice fisherman made an effective jigging rod. An ice Rapala with a meal worm was responsible for this catch of jumbo yellow perch from the depths of Lake Marburg.

LAKE MARBURG PERCH

by George E. Dolnack, Jr.

A few springs ago, I discovered the great fishing at Lake Marburg. What impressed me most, were the catches of jumbo yellow perch. Though I had been well satisfied with my open water forays, District Waterways Patrolman Bill Hartle insisted that nothing would beat fishing through the ice at Marburg for fast-paced action.

I finally took his advice and gave it a try last February on what seemed to be the coldest day of the winter. If it wasn't, it sure missed a good chance to be! The sun's warmth was insignificant compared to the 20 degree temperature that was prodded by a biting wind.

After a two-hour drive from my home in Chester County, I arrived at the lake at 1:00 p.m. and headed for a cove off the Jefferson Road where I previously had excellent luck during less devilish weather. A dozen other anglers were already dug in when I



got there. They had been fishing since morning and only a few fish had been caught.

After preliminary "how-do's" and cutting through 15 inches of ice, I set about to remedy the situation. For the next hour and a half, I jigged various types of lures to no avail.

Then I temporarily abandoned my efforts and headed for the opposite side of the lake to see what was doing. There I found a small group of well-chilled fishermen. Pickings were slim there, too, except for Jim Eshleman of Duncannon who was well on his way to a respectable catch. Using small minnows fished from a homemade tip-up, he had taken a 16-inch walleye and some perch.

After making the rounds to chat with the other anglers, I returned to the spot I had left. It was nearly 4:00 p.m. and the crowd had thinned out. Only the diehards were left and they were well rewarded for their patience.

In my absence, the biting started and perch were starting to pile up on the ice.

Dorothy Sechrist of Red Lion was on her way to become high hook for the day with a deadly combination. She was jigging a small ice Rapala just off the bottom and used a small piece of red yarn on the treble hook as an attractor. Others were having moderate success with a variety of lures.

As they say, "save the best till last." I rummaged through my tackle box and pulled out a silver ice Rapala that had gone unnoticed. After rigging it to my four-pound-test line, I baited the treble hook with a mealworm and lowered it to the bottom. Then I raised it up about a foot.

Slowly, I jigged it a few times, felt a hard strike and raised the rod to my shoulder, I had my first perch of the day. They hit viciously and many of them swallowed the lure. Some took

the hooks on the end, but the preference was for the treble hook.

Toward the end of the day, the perch hit lighter and were more difficult to hook, but by sundown I had 14 big fat perch that ranged from 10 to 12 inches. Four of them had the biggest roe sacks I have ever seen in that particular species. Sauteed in butter and seasoned with a dash of salt and pepper, the roe was a delight to eat.

Perch are only a part of the Lake Marburg story. Other fish caught throughout the year at Marburg include 27-inch walleyes, 10- to 15-inch crappies, 11-inch bluegills, 40-inch northern pike, 47-inch muskies, 20-inch bass, and 17-inch trout.

Lake Marburg is located in Codorus State Park three miles east of Hanover on Route 216 in York County. Best places to fish through the ice are in the coves and around the bridges.

One thing is certain: fair weather or foul, you'll never be alone on Lake Marburg. Congenial group on the opposite page has improvised "ice stove" all fueled up, ready to burn when fingers begin to get numb. Father and son (we think!), below, have mixed catch of yellow perch and a good-sized walleye.





Going ... Going ... Gone?

by Richard Tate

illustration: Nick A. Rosato

Pitch it over there, Fred . . . nobody'll see it."

"Good beer; nice to have a cold and gold one along the creek, especially since the fish aren't biting."

"Yep, nothing like a good brew to set a fellow's mind at ease. Give me another as long as you're having one."

"Danged slobs . . . got no respect for a man's property! I'm going to post this! Busted bottles, stinking cans, paper . . . all over the place. Ripped my fences down, too, I'm tired of it!"

"I don't blame you, Jack. If it would've been my place I'd have posted it long ago. Sure it's nice to let guys fish here, but when the cows can't walk on the grass for broken bottles and old cans, it's time to keep people out."

And you can't really blame him either.

These conversations, sadly, are both true. Apparently many people have no respect for the rights of the landowner, nor do they believe the Pennsylvania Fish Commission's advertising that litter and land abuse cause the loss of public fishing. At least the litterbugs and land vandals don't pay any attention to these warnings. Because of their uncaring attitude, we're all losing our sport of trout fishing on many waters.

I probably spend 300 hours a year fishing for trout, having some good days and having some of those commonly known as "fishless" days. Until recently, my fishing territory has constantly expanded as I've learned new and different places to fish for the elusive trout. But in the past two seasons this trend has suffered a reversal. My fishing territory has shrunk, and the major reasons for this are litter and land abuse.

Clover Creek is a small meadow stream in Blair County, and its landowners, mainly farmers, allow public fishing for trout on their properties. But in the past two seasons two have gotten tired of the messes left behind by unthinking visitors, and they have forbidden fishing on their land by *anyone*. When one of these men was approached recently by Dan Deters, a friend of mine, the landowner said that he had become discouraged with having to repair fences that fishermen destroy each year and with picking up beer cans in his streamside pasture. Not only is this a time-consuming job but it is also costly for him. This is a good man who works hard to support his family and he cannot really afford the inconvenience of the loss of time or the cost of repairing broken fences each spring.

When the other one was approached recently, the owner refused to let anyone fish there. Despite the fact that I have carried many cans, papers and bottles from this man's property, I am denied the privilege, as is anyone else, of fishing there because a bunch of litterbugs and poor sportsmen have irritated the landowner to the point that he will not allow the public to use his land. I cannot blame either landowner one bit for his action. Both men had problems caused by unthinking people who should know how to respect the rights of the property owners, but don't.

Some other creeks near my home in Williamsburg, Blair County, have quite a lot of posted water. Famous Spruce Creek in Huntingdon County is nearly all private water. Much of it is club water, but there are sections of single-owner private water that are posted too. I once spoke with one of these men, and he graciously allowed me to fish his water. He told me that he had let his land unposted, the last public access to the stream in his area, after his neighbors had forbidden trespass. But, he continued, he had been forced to post because of the amount of fishing pressure that his section received and mainly because of the great amount of trash discarded near and in the stream that he had to pick up constantly. Finally, after several years of land abuse, he put up the "NO TRESPASSING" signs as his neighbors had done. Closer home than Spruce Creek is a small freestone stream that I won't name because its open water already receives undue pressure. Though most of it is open to public fishing, there are several sections of it, comprising probably a mile of stream, that have signs forbidding trespass. Although I only fish there a half-dozen times a year, I have never seen the water that is closed. I suspect that litter and vandalism caused this ground to be posted, for I can always count on a half-dozen or more beer and soft drink cans for the creel during a morning's fishing. And, I suspect that there are more similar situations across the state.

Debris along the stream can also cause other problems. Glass is often the culprit here — it can cause cuts and ruined gear. I was fishing a meadow early this summer, again on Clover Creek, and I tramped on a broken bottle. The jagged edge did cut a small hole in the side of my boot foot; luckily I was not cut. Had the bottle been at a wooded stream section where I might have been reaching for a handhold, I might have been badly cut. Litter just plain ruins the beauty of the stream, too. Have you ever sat down on a log along a creek, smelled fresh mint growing nearby, observed the beauty of flowers and then spy a rusty (or new) beer can in the weeds? Heavens, that can that belongs in the garbage ruins the natural splendor of the view. Was it

really too much bother to tote it home? I doubt it.

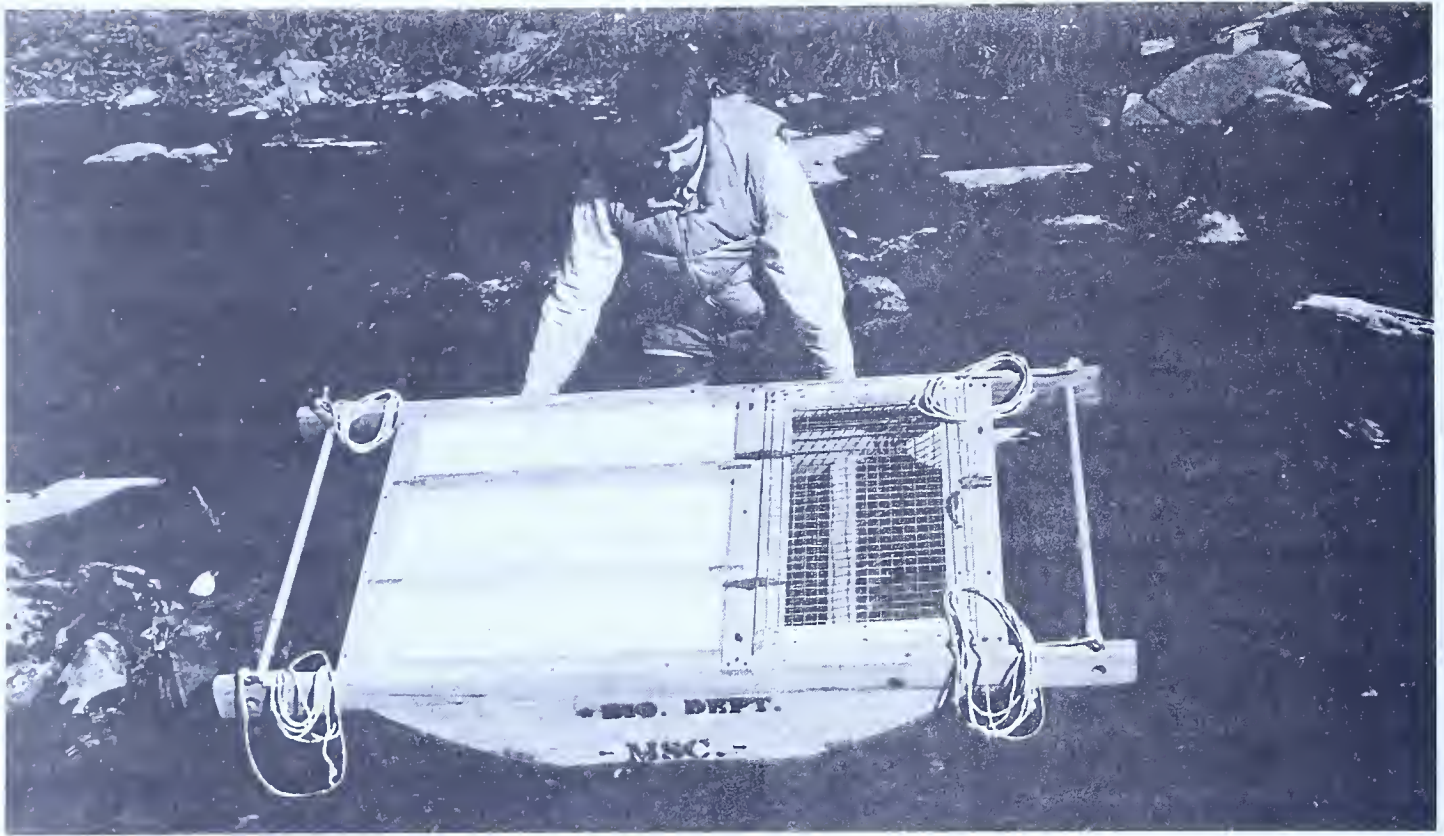
However, litterbugs aren't going to stop for either the posting of land, for potential dangers, or for the ruination of the beauty of the land. And do not assume that I blame fishermen for all streamside litter, because I know that passersby in automobiles often pitch empty bottles and cans into areas frequented by anglers. And some back roads along creeks seem to be regular garbage dumps. Anglers are, though, somewhat to blame for the loss of some of their fishing, even if they don't litter; all fishermen should pick up all the litter they see along a public fishing stream and take it home to dispose of properly. Several of my friends and I do try to keep ahead of the litterbugs in our area and, although we have a difficult time, I do believe that the areas we fish regularly are the cleanest along the creeks that we frequent.

So, fellow anglers, do your part. Cans can easily be carried away from the stream in your fishing vest. A bottle or two can be hauled in a landing net without damaging the net. Paper can be crumpled and put into a convenient jacket pocket. Remember; empty cans and bottles are a lot less heavy than full ones. Though you will undoubtedly gain a sense of pride in your efforts, you will become more and more impatient with litter and litterbugs as you constantly carry junk from the same section of stream.

If you are politically minded, urge legislation that would curb disposable beverage containers. Why? Probably 95% of all litter that I find is comprised of disposable beer and pop bottles and cans. With a deposit on these containers they would be used again, protecting our natural resources, and they would not be cluttering the landscape.

To prevent property damage, crawl under fences rather than climbing over them. Sure, this will take more time, but the fence will remain there, and so will your fishing privileges.

I really like to fish; you must, too, since you are reading the *Angler*. Please help to keep open public water open to the public by showing respect for the land and the water that provide our sport of fishing. We can, in this way, protect the sport of fishing from becoming a "goner."



A FLOAT-STOCKER— ANOTHER ANGLE

by Dr. Vincent Smichowski, Biology Department
Mansfield State College

photos by Ronald Remy, AV Department
Mansfield State College

The concept of float-stocking has been increasing in favor in recent years. By releasing small numbers of stocked fish in favorable areas along the course of a stream it is felt that mortality may be reduced, persistence of stocked fish in streams will be improved and the general quality of sport fishing in these areas will be increased. Better use is thus made of hatchery-reared fish without additional effort or expense to the agency producing and delivering them. We have tested and improved a device for float-stocking that was originally constructed by Jerry Stone, Sonny Stone and Mike Hudock of Wyoming County, Pennsylvania. This final design of the float-stocker should be of interest to sportsman's clubs, waterways patrolmen or anyone con-

cerned with enhancing sport fishing.

As seen by the photos, the float-stocker is a versatile vehicle for distribution of stocked trout by two or four people depending on stream and weather conditions.

The float-stocker designed is built of 2-inch construction lumber, hardware cloth and styrofoam sheets for flotation. It is 36 inches in width, 72 inches in overall length, weighs approximately 50 pounds and is capable of conveniently holding 500 trout in the 12-inch to 14-inch size range. One or more of the dimensions given may be reduced to adapt the device to smaller streams without significantly altering the design. Steel runners have been placed on the rounded underside of the stocker to protect its wooden parts and to ease dragging the

stocker over riffle areas of a streambed. If stockers were to be used in silt-bottomed streams, or in uniformly deep streams, the steel runners may be eliminated.

A test was conducted on the practicality of using two float-stockers in tandem for the purpose of distributing fingerlings in lakes, and with only a slight modification in the hardware cloth dimensions, the float-stockers performed successfully.

The design and plans for constructing this float-stocker appearing in this article can be obtained free of charge by mailing a self-addressed stamped envelope to:

Dr. Vincent P. Smichowski
Float-Stocker—Biology
Mansfield State College
Mansfield, Pa. 16933

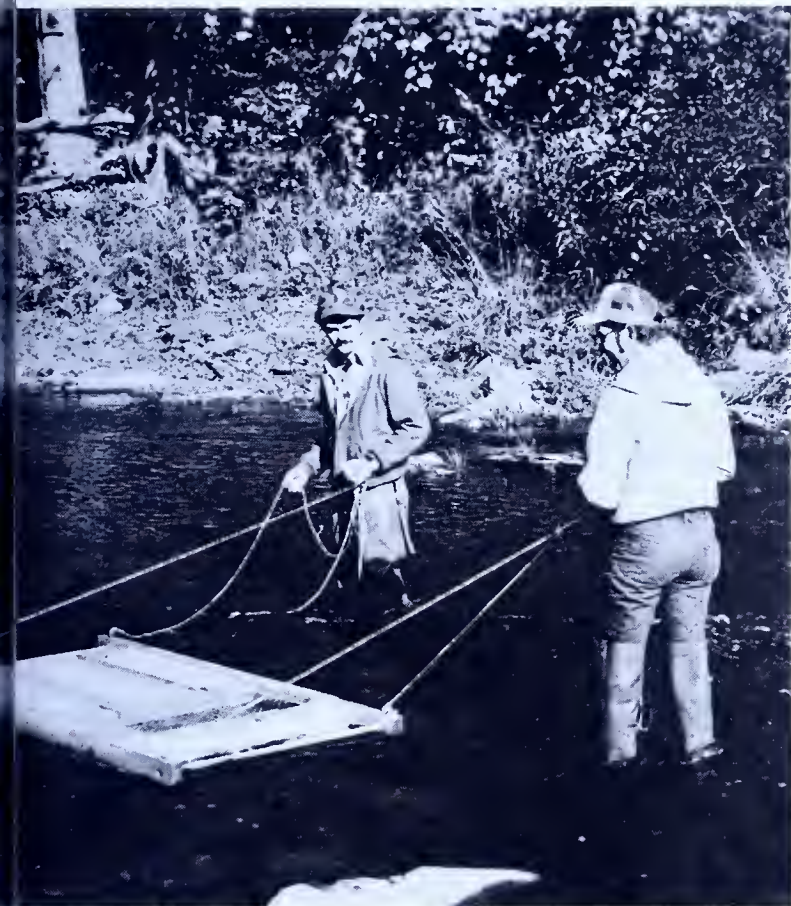
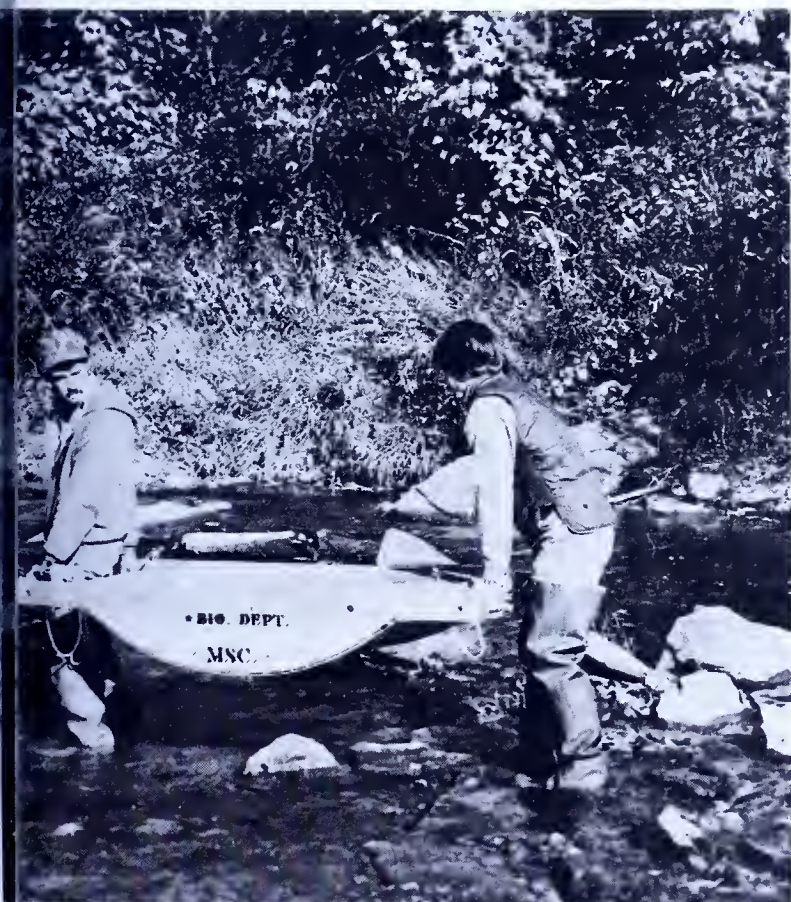


Photo on opposite page shows top view of float-stocker. Two men can handle the stocker easily but more can assist when stocking fish in higher, faster waters.

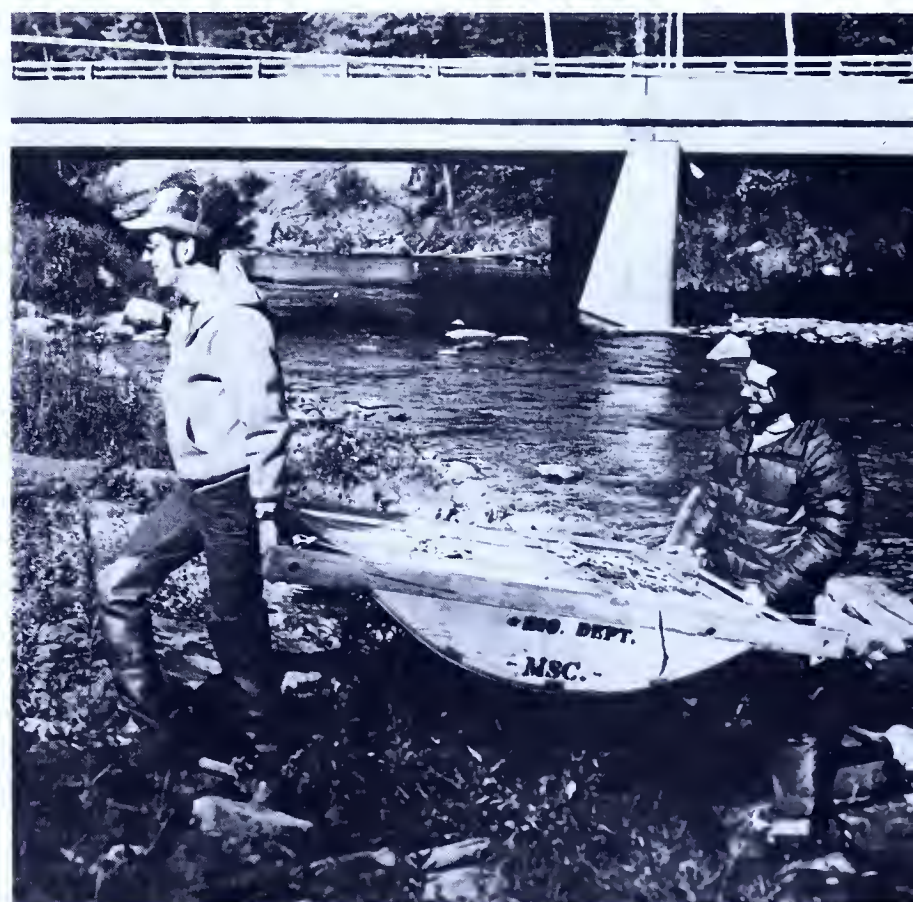


Trout are released by tipping float-stocker slightly, above. Rocking chair contour eliminates corner crowding of trout when ready to be released in stream.

When approaching riffles, boulders or submerged logs, two men are capable of carrying float-stocker and fish around these midstream obstacles quite easily.



These two men demonstrate the ease with which the float-stocker is removed from the water when stocking is finished. Crossbars make good "handles."





Terrestrials for Freestones

by A. G. 'Doc' Eastby

If there are two words that are inextricably linked in the lexicon of angling, they are terrestrial and limestone. For the past generation, fly rodders have believed that creating and fishing imitations of land dwelling insects was the preserve of those lucky few who can spend their days on hallowed limestone spring creeks. It is a common assumption that on these waters flies simulating ants, beetles, and grasshoppers are particularly effective.

Such ideas are widespread and held to be gospel by even the most knowledgeable of trout fishermen. In one sense this is understandable. Fly fishing is a sport in which tradition plays a tremendous role and it was on the limestone streams of central Pennsylvania that terrestrial fishing as we know it originated and it has been a small band of dedicated "limestoneers" who have done most of the ground-breaking labor in this field. But this is an essentially mistaken notion and adherence to it had had a deleterious effect on the development of fly fishing on these rivers most of us call our own.

Some time ago, angler-author Leonard Wright asked how our sport would have developed were it not for our reliance on the lore and learning of our British cousins. Their fascination with mayflies, according to Wright, had a pernicious influence on American angling, leading us to neglect insects that were of great importance both to the trout and to the fisherman, particularly the caddis fly. As a result, anglers on this side of the Atlantic failed to realize that successful fishing in North America called for both flies and a style of presentation far different from those evolved on the

aristocratic streams of England.

It appears that a similar situation now exists with respect to terrestrials. For so long we have been accustomed to taking our lead from the "limestoneers" and, by and large, neglecting terrestrial patterns when fishing freestone streams, that few now are willing to admit that imitations of land insects *should* play a starring role in our fishing. Most fly fishermen seem to be blind to the facts that terrestrials are *vital* to the trout on freestone streams and that flies suited to the placid, slick surfaced Letort Spring Run are not necessarily those that will be most effective on the Loyalsock.

These beliefs and attitudes leave me baffled and bewildered. I fished my first terrestrial, without realizing I was doing something special almost as soon as I took up the fly rod. Much of what I know about fly tying was learned in a struggle to tie an effective simulation of beetles that has lasted almost fifteen years. Furthermore, whenever I have taught fly fishing, either for fun or profit, I have relied on terrestrials since even the rawest novice can easily be coached into taking trout with them. Then too, as I review my notes of past seasons, I find that the majority of the trout I catch fall to imitations of one form of land insect or another.

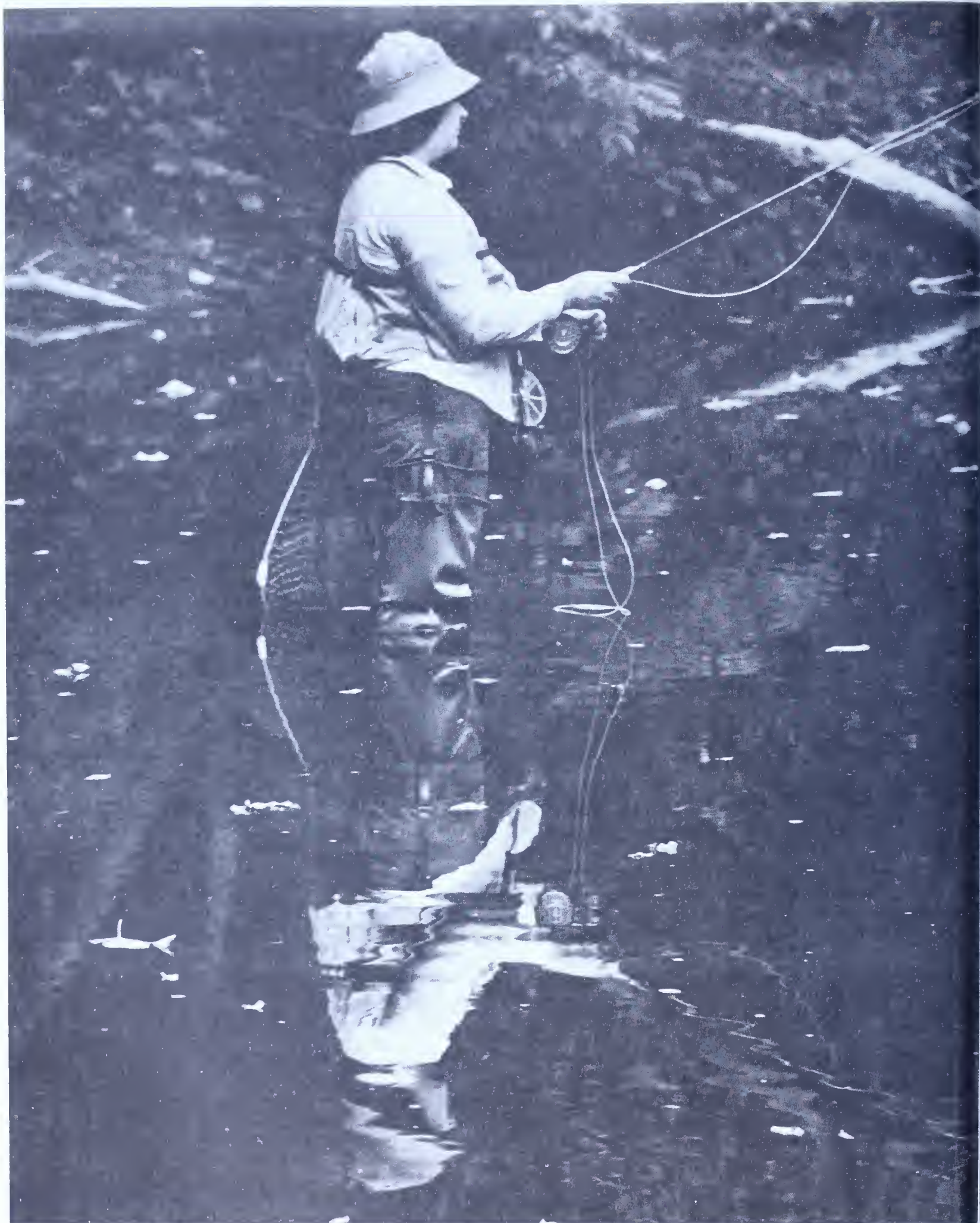
It is also important to note the sharp contrast in the nature of the streams we call "limestones" and those referred to as "freestones."

Consider first the limestone streams. In most cases these creeks issue forth from deep springs, virtually full grown at their birth. They then flow through gentle valleys, usually for only a short distance

before merging with another body of water and losing their peculiar characteristics. By an large these streams are civilized, perhaps flowing as does the justly famed Little Lehigh through a settled valley and a city park, or like the Letort, gently moving past old farmhouses, its borders dotted with homes and buildings. They also possess an aura of peace and quietude, a certain unhurried grace and gentle charm that can beguile the most jaded and cynical of anglers, creating a mood of contemplation and introspection in the most boisterous of extroverts.

Then too, these creeks are among the best trout habitats in the world. They flow at an almost constant rate and temperature the year round, and, according to the biologists, they are perhaps the richest waters in North America in terms of fish food. As is the case everywhere, a trout's life is always a struggle for survival, but in the limestone creeks conditions are easier, the struggle less intense. Fish can pick and choose from a full and varied menu, they can shelter in lush beds of watercress and elodea, and they never have to seek new homes where the temperature is more to their liking and oxygen is plentiful.

How different are the untamed freestone streams most of us fish. The very *structure* of these rivers is so unlike that of a limestone stream that comparison is almost impossible. The pools, riffles, and cascades, the pocket water, deep runs, and rocky bottoms that are characteristic of freestone waters are absent on most spring creeks. Even their watersheds are different since the freestone streams course over mountainous terrain and generally flow through forests or



On Wayne County's Dyberry Creek Clara Eastby uses a cricket pattern exclusively and she catches more and bigger trout than do other anglers with their mayfly and caddis imitations.

wooded areas.

The rivers and creeks of the mountains and foothills are subjected to extremes of heat and cold, of flood and drought, and of abundance and scarcity. Especially during the summer the freestone trout faces severe stresses. One of them is hunger. In July and August hatches are sparse and there are few opportunities to feed on aquatic life forms. The trout, however, adapt to these circumstances by turning their attention to unlucky ants and unfortunate crickets that chance into the streams. Indeed, they will often look upon land insects as mainstays of their summer diet. The limestone trout, on the other hand, always has a generous supply of aquatics such as shrimp and sowbugs to provide breakfast, lunch, and dinner. The spring creek fish, while feeding avidly on beetles and grasshoppers, do so out of choice, not necessity. Their poor relatives in freestone waters must depend upon terrestrials or face the very real prospect of going hungry.

These contrasts should provide anglers with a key clue toward solving the puzzle of terrestrial fishing. We all know that different water types require different methods of presentation and different flies. Since it would be almost impossible to find two kinds of water as different as valley limestones and mountain freestones, it stands to reason that the way we fish them and the kinds of flies we use should be different. Then too, since freestone trout feed on terrestrials out of necessity, it also stands to reason that imitations of these insects will be among the deadliest lures that can be presented to them.

As a product of my thinking along these lines and of my efforts to translate thought into action I have come up with a box full of oddities that serve admirably to take trout on the mountain creeks and rivers I fish regularly and have done yeoman work on freestone streams far from home. In some cases all that was required was a change in technique or in the details of the dressing of the flies; in others, entirely new flies had to be devised.

An excellent example of the adjustments that can be made to tailor limestone patterns to freestone conditions is the case of the famous Letort

Hopper. In all the standard reference works this fly is dressed with a *yellow* body and an overwing and head of natural brown-grey deer hair. While I may not be a degree-holding entomologist, I do observe the life around me when I am fishing. Seldom have I seen a yellow-bodied grasshopper. The species that abound along my favorite meadow stretches are pale brown with dark mottlings (*Camnula pellucida*), grayish-brown flecked with red (*Dissosteira carolina*), and dark olive (*Melanoplus bivittatus*). It seems obvious to me that however telling the Letort Hopper may be on its home waters, it simply is not going to do the job on creeks or rivers where these other species predominate. By substituting different colored body material and deer hair dyed appropriate shades, the effectiveness of the fly is increased tremendously.

Although all that is needed to transform certain limestone patterns into flies that will deceive freestone trout is to tie them in another color, some flies need only to be fished in a style suited to prevailing conditions.

An ant is, of course, an ant, and they are much the same whether found in the Great Smokies or the Colorado Rockies. They may differ somewhat in size and coloration, but the standard patterns that are readily available all over the country cover most of the possible variations. But how and when they are fished is another matter entirely.

I have been lucky to have as a companion one of the most dedicated "antmen" in the country, my brother-in-law Gerry Wetzel. His devotion to fur-bodied ant imitations is total and he has fished them at times, in places, and in ways that are often surprising. His greatest successes to date have been on a reach of a small Pocono river. The prevailing winds in the valley carved by this stream are from the west, and on breezy days he positions himself on the east bank of the creek. He then casts directly across stream, allowing the ant to drop an inch or two from the west bank. The fly is then skipped along by both the drag of the current on the leader and by his retrieve. I have stood next to him and seen browns of respectable proportions lunge out from their bankside holds and slash at the skittered flies, hooking themselves in

their anxiety to snatch these tidbits before they could escape. He is, of course, taking advantage of the trout's keen awareness of ants and is imitating the way they roll along the surface when they are caught by the wind. Whether this tactic would work on the Yellow Breeches or Big Spring Creek is a moot question. But it does take trout on mountain rivers everywhere I have tried it.

While the ant may be an example of a fly that must be fished in a different way in different streams, there are more instances in which freestone streams call for new patterns.

Almost a score of seasons have passed since I first fished the brawling Big Bushkill, but I can still recall with startling vividness the summer evenings spent on this water with my father. The mainstays of our fishing were Art Flick's famous Cream and Dun Variants. But once total darkness had settled over the river, we invariably switched to large Grey and White Wulffs. My father insisted I tie them with the wings projecting out from the sides in much the fashion of a spent-wing pattern. On sweltering July nights, we worked these flies over the tails of pools and, often enough to keep the sport interesting, we took trout.

At the time, I did not realize that these flies actually imitated nocturnal moths. This was brought to my attention by an angler I chanced to meet one night. He stared incredulously at my fly and inquired if I were using a *live* moth for bait. Driving home that night I considered the comment and resolved to try to tie a more realistic simulation of the night flying *Lepidoptera*. Although the process of creating effective replicas of these insects has been long and arduous, I have succeeded.

Now I carry two patterns in my box that do a better job than the mutated Wulffs. They are simple flies — two strands of polypropylene wing material tied in perpendicular to the shank, a thick, fuzzy body of polyprop dubbing, and hackle palmered over the front half of the body — and I carry them in two colors, brown-olive and tan-cream. Although I don't do as much night fishing as I once did, these patterns have proven themselves time and again. They are also an excellent choice for twilight fishing on those

The Wilcox Bridge Pool on the Dyberry, the scene of many battles lost and won, is in Fly-Fishing-Only waters. It can be fished with ants, beetles and 'hoppers as long as they are made of fur and feathers.



evenings when there is no hatch. Drifted slowly along deep runs or in the tails of smooth pools, given an occasional twitch, they can provoke surface shattering rises.

For everyday fishing, however, I rely on copies of the immature stage of moths, caterpillars. Once again, the imitation is easily fashioned. A fuzzy body of polypropylene is dubbed on the hook and this is ribbed with poly-yarn of a contrasting color. Hackle of a complimentary shade is palmered over the entire body and then

trimmed. The effect that is achieved is an impressionistic caricature of the insect that will induce trout to rise.

Trout can be extremely selective when it comes to caterpillars. If they are used to seeing brown and green insects and the angler presents a yellow fly, it will be ignored. The colors I generally carry include brown and green, brown and yellow, and brown and cream, which seem to cover most of the commonly encountered caterpillars.

One larva of a member of this order

deserves special treatment: the inch-worm. During most of June and early July, these insects find their way into the stomachs of trout with astonishing frequency. To copy them, an all green caterpillar can be tied in the manner outlined above. But I prefer a somewhat different fly. I tie a length of poly-yarn and a length of heavy green thread to the hook shank. Then I spin on a heavy body of polypro dubbing. The yarn is pulled forward along the back of the fly and tied off. As a final step, the entire fly is ribbed with



A terrestrial fly is a good choice for young anglers since they do take trout. Gerry Wetzel is shown here working a small Pocono Creek.

the heavy thread, creating a segmented effect.

Taking my cue from the bait fishermen, I work these patterns upstream, drifting them through likely runs, casting them under overhanging trees. In still water pools twitching the fly ever so gently so it rocks back and forth in the surface film will at times provoke trout into rising. Even a sluggish fish nestled in the safety of a good hide can be prompted to take if repeated casts are

made and the fly is allowed to drift close to his position time and again.

When it comes to teasing trout, however, I prefer simulations of the order *Diptera* (the true flies such as the common house fly and the horse fly) or *Hymenoptera* (bees, wasps and their cousins).

Recently I had an opportunity to watch a common woodland robber fly, a member of the family *Asilidae*. Seated on an old plank bridge spanning the East Branch of the Dyberry

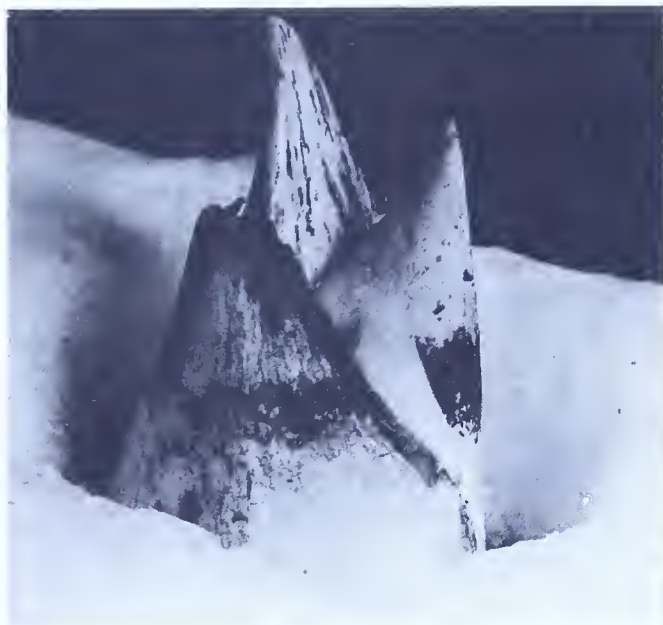
Creek, a tiny Pocono Mountain brook, I watched this winged demon ambush virtually every insect that chanced into range. Eventually, it took on a mud-dauber wasp which was more than it could handle. Both insects fell into the water. From underneath the bridge a foot-long trout arched upwards, snatched the struggling insects from the surface, and returned to his lair beneath my dangling legs.

With the recollection of this experience, and others like it, in mind, I sat down and tried to tie a dry fly that would imitate these insects. Using one of the newly introduced "fly-body hooks" I build up a tapering abdomen of dubbing, tie in a half-dozen turns of hackle, add a dubbed thorax and then a pair of poly-yarn wings (either lying parallel to the shank along the back of the fly or slanting out from the sides). Tied in a variety of colors, especially gray, brown, and olive, these flies have become one of my mainstays whenever I am on a wooded stream and particularly when I am working small, cold brooks tucked away in mountain valleys.

To complete my collection of terrestrials tailored for freestone streams, I add a selection of cricket imitations, some sham beetles, and a few bogus bees. These flies, however similar they may be to those popular on the limestone streams are not fished in the same fashion. Grasshoppers and especially beetles should be delivered with maximum noise and commotion and can be retrieved rapidly across the surface. This will often provoke even the most sophisticated, streamwise, and virtually undupable trout into a frenzied rage that sends him slicing through the water in pursuit of the fly.

Such then are some of the terrestrials that take freestone trout. It may very well be that both the flies and way they are fished, with twitches and splashes, manipulated and skittered over the surface, will be subjected to the disdainful comments of purists who insist that their way is the only way. I am not overly concerned. Of course, like most people, I would prefer the approval of my peers. But I am content if the final arbiters of every angler and every fly, the fish, approve. And they do.

Flower and leaf cone of skunk cabbage appears while snow still remains on the ground, left. Heat generated by rapidly dividing cells melts frozen soil and snow around the plant. The "nose cone" pushes up like a missile emerging from underground, center. First to open is the handsome flower, right, mottled with green, purple and red, with sepals folded like hands in prayer.



Heralding the arrival of spring,

SKUNK CABBAGE

has a smelly beauty all its own

by Don Shiner

Along with early sucker fishing, one of the first harbingers of spring is the appearance of skunk cabbage, *Symplocarpus foetidus*. Putting in an appearance in late February or March, the tightly wrapped cone of this plant often pushes through patches of snow that remain on marshes and stream banks. So much warmth is generated by rapidly dividing cells within that frozen soil and snow melts in a ring around the plants. The cones, bearing flower and rolled up leaves, push through ground like missiles emerging from underground silos.

Those who observe the appearance of skunk cabbage know that the beautifully mottled green, purple and red flower is first to appear. Sepals

around it are folded like hands in prayer. Inside a lavender colored fruiting structure swells.

There is a slight odor from the flower, like that of the leaves, that has a tinge of "skunk-like" essence — hence its name. Though offensive to sensitive noses, the odor serves to attract a variety of "snow flies" and other early emerging insects that are maturing from embryos beneath sun-warmed leaves. These help to bring about pollination.

When one marks time until spring appears, by making regular visits to marshes, one finds leaves unrolling from the cone much like the unraveling of a cigar or cabbage head. By the time leaves have unfolded to full size, April has barely put in an appearance

on the calendar. The broad spread of foliage gives a canopy of green to the marshy soil.

The hooded sepals soon wither and disintegrate, leaving the multiple fruiting spadix exposed. Later, in autumn, after frosts occur, this fruiting structure splits open to discharge ten to twenty hard, bean-shaped seeds.

Despite the disagreeable odor and forbidding name, the early appearance of this wild flower is a welcome sight to all who visit streams in early spring. The appearance of skunk cabbage, while snow still blankets the ground, forecasts the weakening of winter and a spring close at hand. It is that time of year which all fishermen eagerly await!



Inside, a lavender colored fruiting structure swells, above left. While spadix is being pollinated, the leaves begin to unravel from the cone, center. Leaves unfold like the unraveling of a cigar, right. Foliage continues to unfold until it hides the now shriveled flower, below left. By late summer and autumn, leaves wilt and decay, revealing the ripened spadix, now larger than a golf ball, center. The multiple-fruiting spadix splits open to spread its hard, bean-like seeds, right. Another cycle in nature has been completed.



Leaky Boots

(continued from page 3.)

BUGGED! HORSEFLIES?

It bugs me every time I hear someone say "I caught a palomino trout."

I've searched the dictionary and the encyclopedia and I can find nothing to indicate that there is such a trout.

Furthermore, Palomino, as I see it, is not a color. Palomino is used only referring to a horse—light tan or golden, or breed (a line of breed). Now, I agree that there are at least eight different kinds of trout. One of these is a golden trout but that particular trout is the "state fish" for the State of California.

In my opinion the trout you call a palomino is simply an albino—any organism lacking normal pigmentation. I guess what I really want to know is how the Fish Commission decided in calling this yellow-colored rainbow trout a Palomino.

Please don't say that the color is what determined the name because if it were, then if I had a yellow car I could say "Hey, I drive a palomino." Don't misunderstand me! I'm not trying to be smart or funny. I'm a trout fisherman of 43 years' experience. I feel that this is always going to bug me until I find out just why this particular name was given to this trout.

Will greatly appreciate it if you will explain this to me. I'm just one of those people that if I'm wrong I want someone to tell me and explain to me as to why.

Any consideration given to this letter will be greatly appreciated. Thank you.

HOWARD R. AUKERMAN
Spring Mills

Well, Howard, we'll try to "unbug" you but it won't be easy because first you say "Please don't say that the color is what determined the name . . ." then, ". . . if I'm wrong I want someone to tell me. . . ." But, here goes:

Back in March of 1972, Dr. James E. Wright, Jr., Professor of Genetics at the Pennsylvania State University, wrote an *Angler* article explaining how the Palomino came about. Since back issues of the *Angler* are difficult to come by, we'll excerpt bits and pieces of it, italicizing specific areas which might help clear up your dilemma . . . maybe.

"In 1967 a new rainbow trout strain was introduced into some of the trout waters of Pennsylvania as a novelty. This was the PALOMINO. . . . The fish was so named because of the similarity of its color pattern to that of the palomino horse. Little did biologists at Benner Spring Fish Research

Station know how prophetic this name would be when it was chosen on the basis of color alone. It turns out that this is a color phase in rainbow trout which behaves in its inheritance very similarly to the inheritance of palomino coat color in horses.

"Neither palomino trout nor palomino horses breed true for color—they are both genetically hybrid or heterozygous for a gene causing color dilution. Generally, when palomino horses are mated, they produce chestnut, palomino or cremello (white with colored eyes) color types in a rather precise genetic ratio; when palomino trout are mated, they produce normal, palomino, or golden types in the same genetic ratio.

"The goldens of West Virginia are exactly as the name implies—a rich golden color with the rainbow stripe along their sides, but with dark eye color which distinguishes them from the pink-eyed albino rainbow.

"The pure strain of goldens had come from a single female spawned in the fall of 1954 and whose body was a mosaic of golden and normally pigmented tissue. . . . Her sex cells were also apparently genetically mosaic for she produced several hundred light-colored offspring which we now know to have been palominos since she had been mated to a normally pigmented male. Selective breeding among subsequent generations produced the true-breeding goldens.

"The accident of nature, or gene mutation, which gave rise to the female described above apparently has occurred a number of times, for this golden strain, along with its related palomino color phase, is found in public agency and commercial hatcheries in a number of states of the United States and in Japan. This golden mutant of rainbows (*Salmo gairdneri*) is distinct from the California golden (*Salmo aquabonita*).

"Eggs and sperm were stripped from a pure strain of goldens at the Petersburg, West Virginia Hatchery and transported under refrigeration to Benner Spring Fish Research Station in September, 1965 and used in crosses with sperm or eggs of normally pigmented strains of rainbows maintained there. Nothing unusual was noted about the fry that hatched until they were several months old. Then it could be noted that they were much lighter than normal rainbows but darker than the pure strain of goldens; indeed, they were intermediate between the two. As they grew older, this intermediate color phase became more discernible and the basis for it was found to be an intermediate number of melanophores (bodies in the fish skin which contain black pigment, or melanin)—intermediate between the high number found in normally pigmented rainbows and the absence of melanophores in the golden mutant."

So there!

Evidently, as Dr. Wright suggests, when the Palomino was originally given the monicker, no one realized its genetic similarity to that of the horse of the same name. That one worked out just fine—let's hope we're not so fortunate with "Tiger" Muskies! Maybe "Northallunge" or "Muskapike" would have been less risky. Still "bugged"? We hope not. Ed.

"RARE BREED," HE SAYS—

A sincere congratulations to the Pennsylvania Fish Commission and the inhabitants (fly fishers) of "Penns Woods." It has been my pleasure fishing in the "tip-and-sip" region of Pennsylvania limestone country. The fly flickers of Pennsylvania are an intelligent, rare breed of fine sportspersons. A special thanks goes to the PFC for a job "well done." The Commonwealth should be proud of this combination of fly fishing heritage. I am.

Tight Lines,
MEL THOMAS
Winchester, Va.

Come north again, Mel, anytime! Sorry, we don't have what you seek on Falling Springs Run. Local information is best obtained by contacting the waterways patrolman for the area. In this case, it's Mr. Bryce Carnell, St. Thomas, Pa. 17252. Ed.

NATURE STUDY

I especially enjoyed the October "Taking A Closer Look" column by Tom Fegely. The study of aquatic insects can make even a fishless fishing trip an enjoyable experience. On one memorable occasion I watched a hellgrammite emerge from a pile of leaf drift near a pool in a small trout stream. The resulting Dobsonfly took off on its maiden flight like an underpowered 747, hit the water surface several times and finally disappeared into the overhanging tree canopy.

DONALD K. GARTMAN
Wilmington, Delaware

BIG DAY!

My husband and I have been avid anglers for many years, and I can remember in the 1950's and 60's, when fishing within an hour's drive of our home in Berks County was very limited. But in the last four years (since our return to Berks County after living in Arizona for four years) we have discovered the Pennsylvania Fish Commission was busy indeed. We now have difficulty choosing which of the many fine areas nearby we wish to fish. Struble Lake is our favorite, however.

I wish you still had the county maps available that were given out back in the early 1960's. These showed not only the streams, lakes, etc., but also all county and state roads so there was no trouble finding a new fishin' hole.

Now to get to the real reason I'm writing.

In the June, 1977 *Angler* was an article titled "Bait-fishing" by Richard Williamson. I take exception to one of his statements, to wit: "A nightcrawler on a No. 12 hook would be ridiculous."

On May 15, 1977, my husband, Dick, was fishing with a nightcrawler on a No. 12 hook and caught the following:

1 northern pike 28", 15 lbs. 12 oz.

1 largemouth bass 16" (released unharmed)

1 sucker 18"

1 brown trout 24", 6 lbs. 12 oz., that earned him a citation.

I am enclosing photos of the trout and the pike.



The rest of his rig consisted of a closed-face spinning reel (not a spincast) mounted on an 8½-foot fly rod and 4-pound-test line. This may be the reason he was successful with such a small hook. At any rate, it was a day Dick will never forget.

Thanks to the Pennsylvania Fish Commission for a fine publication.

SHIRLEY J. BERNHARDT
Wernersville

Speaking of exceptions, Shirley, your husband's one-day catch has got to be one of those exceptions that belong in the record book! Dick had better not forget that day . . . we'll bet it will be a long time before he has another like it. We've heard of larger fish being caught on even smaller hooks, certainly, but Mr. Williamson is speaking of *average* tackle, for *average* fish, under *average* conditions. Ed.

HAPPY ENDING

Dear Mr. Abele:

During several fly fishing jaunts to Rowe Run in Franklin County during May I became alarmed when I found dead trout, no growth of elodea, no flies, no rises, and banks falling into the stream. On my last trip there a friend and I found the same conditions. We tried to find evidence of insect life. We found nothing but scuds (in great abundance). In a mile of fishing we saw no fish, no rises, and caught no trout. Since we knew the stream had been stocked generously — once by the Commission and four times by two cooperating nurseries — we decided it was time to report the conditions to the Commission.

I told the story in a note to Waterways Patrolman Carnell located in St. Thomas. Last week he called me and told me a team of stream biologists from Bellefonte would survey the stream and invited me to be present.

My appearance during the survey was a beautiful revelation to me. Mr. Carnell and the team of three Biologists from Bellefonte (returned from intense work in Fulton County) were evidence incarnate of the interest, cooperation, and care the Commission has in our Commonwealth

waters. For two hours — and right through a tempting lunch hour — they tested, searched, measured, and shocked the stream. They found nothing significantly wrong, except a lack of cover attributed to a severe winter — a condition prevalent this year in the limestone streams.

I should have been embarrassed and admit to being an alarmist, but your team would have none of my apologies for "dragging them out on a wild goose chase." All of us were happy that my suspicions were unfounded. There were trout and there was abundant food for them. Now we await a rapid growth of returning cover.

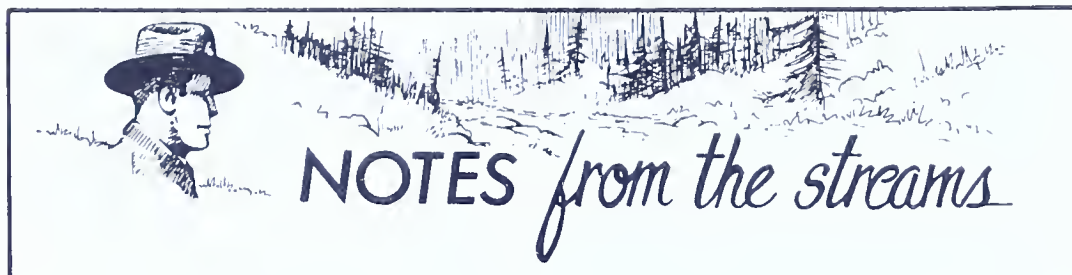
I am thrilled that I, a private citizen and avid fly fisherman, received a sympathetic response to a one-man report of a condition which could have gone unreported and allowed to heal itself. But I am quick to note conditions which vary from the norm, and I follow the maxim "Rather safe than sorry." My congratulations and appreciation for the Commission's response and cooperation with my attempt to avoid catastrophe.

Gratefully,
CLARENCE GLESSNER
Shippensburg

The Angler is the only magazine dedicated exclusively to **FISHING & BOATING** in Pennsylvania!

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TRY THIS—

A technique in trout fishing, especially when using flies, is to find a feeding trout and then offer him an imitation resembling when he is feeding on in the hopes that he will take it. This is a very successful method of catching trout. Many fishermen fail to realize that this also works very well with smallmouth bass. Drifting along in a canoe or boat on a good bass stream one very often sees bass chasing minnows with the small fish jumping out of the water trying to avoid the feeding bass chasing them. When you see this, just toss any lure resembling a minnow into the area and nine chances out of ten the bass will hit it. In fact the lure is usually taken as soon as it hits the water, so be ready to set the hook.

Larry R. Baker
Waterways Patrolman
Mifflin/Juniata Counties

AN ELECTRIFYING DINNER

While assisting Biologist Dave Daniels and Robert Mose survey Martins Creek, we found quite a number of trout and many other fishes, including a large fall-fish with a crayfish in its mouth.

Imagine being zapped with 150 volts about the time you chomp down on a tasty crayfish. I'll bet this fish will think twice before he tries another crayfish for his dinner.

Stephen A. Shabbick
Waterways Patrolman
Wyoming County

YOU BE THE JUDGE —

Many times state agencies are criticized for the decisions or policies they make. Such was the case a couple of years ago when the trout stocking allocations were changed.

Basically, what was changed was that the majority of the trout were going to be stocked where the majority of the people live and a greater number of licenses were sold. With the oil industry experiencing shortages and inflation putting everything out of sight, it was felt the people in the metropolitan areas would be fishing closer to home.

I don't know what the cause was; but, in

my district I did see quite an increase in fishing pressure . . . not only in the beginning of the season but all through the summer.

To get to the point, York County was one of the areas that was given an increase. Last year's stream surveys were conducted on most of the stocked streams in the county. The interesting thing to note was that we did find some trout in all streams, but the thing that really opened my eyes was considering the number of fish stocked. We found very few left by late summer.

Conclusion: I feel in this instance the program has worked for its intended purpose putting a wonderful resource where it can best be utilized by the majority of the people.

William F. Hartle
Assistant Supervisor
Northcentral Region

SYMPTOMS SHOWING!

Yes sir, the fever has struck. Up and down the Monongahela River men and women anglers are out trying to get a musky. I have heard reports of some nice ones caught. Almost every time I check an angler in a boat, the question is, "Have you heard of any muskies being caught?" The other day Walter Sarsfield, an EPS for DER, and I were getting some samples of a few discharges. There were five boats out in this one area. When checking the fishermen, all had the same query. "Heard of any muskies around?" "Seen anyone with a musky lately?" And, "When do you think the muskies will start hitting?" The fever has spread and it's great to see the enthusiasm!

Jerry Greiner
Pollution Patrol
E/Allegheny County

NEW NOMENCLATURE!

While attending the Waverly Sportsmen's Club Annual Fishing Derby at the Lackawanna State Park, I was discussing the start of the event (which would take place at 10:00 a.m.) with Ralph White, a longtime club member. We were standing in the parking lot and Ralph saw a familiar vehicle pull into the parking lot.

He turned to me and said that his grandson was in the car and was very excited about fishing in the derby. About this time a small boy about five years old came running toward Ralph yelling "Grandpa, Grandpa, I can fish in the derby!" Ralph replied, "Sure you can fish in the derby." The boy said, "Look Grandpa, I got a new stick, rope and grinder." There he stood with his new rod, line and reel, proud as could be, telling his grandpa that his old "grinder" broke and he got a new one!

Robert E. Fasching
Waterways Patrolman
Lackawanna County

NEW USE FOR FISH STRINGER:

While on routine patrol in the mountain area of Fayette County my patrol car's tailpipe came off. There I was, 20 miles from the closest house, and I had tailpipe problems. I looked through the car and could only find a fish stringer. I used this to hold up the tailpipe and it worked very well!

James E. Ansell
Waterways Patrolman
Fayette County

EGADS!

A local angler fishing for carp on the Allegheny River at Manorville, caught a 34½-inch muskellunge. The angler contacted me for a Husky Musky Award, but upon hearing the size fish needed to qualify (over 50 inches), stated, "My God, you really want a big fish. Looks like I need to go after MOBY DICK!"

James R. Smith
Waterways Patrolman
Armstrong County

INCREDIBLE!

Monday, October 11th, was one of those days that started out to be a real bad day but ended well.

A friend of mine, Herb Schwegler, and I decided to go duck hunting since it was a state holiday. We decided on the upper end of Sugar Lake where a few wood ducks came from the Erie National Wild Life Refuge to give some pass shooting. Our canoe was launched and we proceeded to the right spot. We were both out of the canoe and placing it in the bushes when my foot became entangled and I dropped to one knee. Of course the water was 2 inches higher than the boot top. Continuing to hunt, I moved off and picked an area with a maple tree for cover. A duck flew right overhead and, just as I shot, I lost footing again and sat

down in 18 inches of water. Cold? You bet! Left there for home and dry clothes. Then we went to Tamarack Lake, launched the canoe and paddled from one end to the other (lake is about 4-miles long) without getting any ducks!

Herb did get to shoot at two but with no success. About one-fourth mile from the vehicle I realized I no longer had my billfold. Too tired by this time to paddle the entire distance again we got the electric motor and proceeded to hunt for the billfold which I had little hope of finding. About halfway up the far side I saw it bobbing up and down next to the lily pads. Herb suggested and I agreed, that Someone up above was watching over me to have found the billfold in 460 acres of water! The only thing to my benefit was to have inserted it into a plastic "baggie" and put a wire tie on it before leaving the house. Everything in it was still dry. I considered it a good day after finding the billfold again.

Cloyd W. Hollen
Asst. Supervisor
Northwest Region

**WHO WILL BE
THE LUCKY ANGLER?**

Since the beginning of my assignment to Somerset County in 1974, I have lost two watches, two water thermometers, and one pair of sunglasses in the Yough Reservoir.

One day, I expect a telephone call from some angler stating that a walleye was caught and was found to have one of the above in its stomach. Since the watches are of the species *Timex*, hopefully, they will still be ticking!

Bud Flyte
Waterways Patrolman
Somerset County

OUCH!

On the morning of last September 4th, coming home from boat patrol on Kinzua Dam at 12:15 a.m., I was following a car going toward Marshburg on Route 59. All at once the car started weaving erratically all over the road, just missing going over the bank twice. It finally came to rest in the middle of the road.

I pulled off the road behind the car thinking someone was possibly having a heart attack or some other kind of trouble. The door of the car flew open and out jumped a man about fifty-five or sixty years old and he threw something out of the car. As I approached him, he held his hand kind of funny. He then explained he had been fishing at Sugar Bay and had caught a very large snapping turtle. He

placed the turtle up front on the floor of the passenger side and started for home. After he had traveled a few miles, the turtle started to crawl over the hump of the car. The gentleman then slapped the turtle twice, and the third time it took off his index finger!

I looked at him and then looked at the turtle. Sure enough the turtle had the man's finger in its mouth. I shot the turtle in the neck with my .38 so I could get his finger for him. The turtle weighed between fifty to sixty pounds.

After I shot the turtle, the man gave me all kinds of H—— for killing it. I then proceeded to bandage his hand and retrieve his lost finger. Not once did he say thanks for the assistance. He had a buddy in the back seat who was no help at all. I then offered to take him to a local hospital, but he said "No thanks" and turned his car around and headed back towards Warren, Pa.

Richard L. Budd
Deputy Waterways Patrolman
McKean County

POOL CLEANER?

While gassing the patrol car the other day, a fellow asked me if he could stock some catfish in his swimming pool. When I asked him why he'd want to put catfish in his pool, he replied that he had a bad algae problem in his pool and some of his buddies told him that if he caught some catfish and stocked the pool they'd eat up all of the algae and leave his pool sparkling!

I had a difficult time trying to dissuade this man until I asked him if his buddies also told him how to keep the catfish from being killed by the chlorine.

Guy A. Bowersox
Waterways Patrolman
Montgomery County

FEBRUARY 1977 . . .

We had just been through one of the coldest winters that I can remember for a long time. Many streams had no open water on them at all and all the lakes and ponds in the county were frozen over since early December. I do not know where Kingfishers go through the winter or what brings them back in the spring. The day the ice started to break up in Marsh Creek that year I was travelling to Gaines, Pennsylvania and part of my journey took me along Marsh Creek below Wellsboro Junction. As I was going, the ice on Marsh Creek still covered the creek any place you would look. On my return, about four hours later, as I passed the cinder and gravel pile at the intersection of Route 6 and Route 287, I saw a Kingfisher in an old willow tree. I wondered what he was

doing here at that time of year and what he would find to eat. I stopped and went back to the area and a small area of open water started to develop. This was not open when I went by earlier. I don't know how the Kingfisher found this one little area, but I hope he found something to eat.

Raymond Hoover
Waterways Patrolman
Tioga County

"FALL-HOOKED"!

While picking up my hunting license at the Cameron County Treasurer's Office, three hunters from Ohio and one nonhunter (fisherman) from Kentucky purchased four 7-day tourist licenses. These gentlemen indicated that they really enjoy the fall months' fishing and the one came only to fish as he did not hunt with bow and arrow. I have had much interest in this extended season and most of the stocked streams hold some carry-over fish as I have checked some very nice trout. Try it next fall, you may like it!

Stanley Hastings
Waterways Patrolman
Cameron County

FAR FROM HOME —

Last fall I spoke with a canoeist on the Lehigh River. He had just completed a trip through the Lehigh River Scenic Gorge. The hardwood forests on either side of the corridor were at their very best autumn colors. He stated that this was the most beautiful scenery he had ever seen. I guess this should give Pennsylvanians something to reflect upon since he had travelled here from Geneva, Switzerland to make the trip!

Robert Lynn Steiner
Waterways Patrolman
S/Luzerne County

RESCUE —

Recently, I took some youngsters up to Pymatuning Lake to feed the carp and got to witness a rescue. No, nobody fell in . . . someone had thrown an empty bread bag into the lake and a 13-inch bullhead swam into it and couldn't get out! Every time someone tried to reach it, the "bread bag" would dive for the bottom and come up a few feet farther away. Finally, one enterprising individual got a broom, cornered the bullhead and, to the cheers and applause of the onlookers, worked the plastic bag off it.

Don Kingery
Deputy Waterways Patrolman
Allegheny County

FLY TYING

HOAGY'S "Little Orange Mayfly"



by Chauncy K. Lively
photos by the author

It's a . . . well, you would hardly call it a streamer fly in the usual sense, it's more like a . . . come to think of it, it's not quite like an ordinary wet fly, either. Nor is it a nymph. But whatever it is, it's a unique fly and there have been times when it has produced some mighty unusual results.

My first exposure to the pattern was three years ago, on a hot August afternoon when Hoagy Carmichael and I were tying flies for the evening's fishing. After we had dressed a modest supply of the essentials, Hoagy announced that he would show me a pattern I'd never seen, one that was often effective on his home Battenkill water in the fall. He then tied two specimens, on long-shanked, size #10 hooks, and deposited one in my fly

box. It was an interesting fly with an orange body ribbed with a palmer-wound ginger hackle, trimmed to a mere stubble, and finished with a down wing and throat of wood duck flank fibres. I speculated that its somewhat gaudy coloration made it conspicuous in murky water following fall rains and during high water in spring. I hadn't anticipated what was to follow the next day—far from the Battenkill River in gin-clear midsummer water.

Four of us had packed our gear in the station wagon and had driven over to a favorite stretch of stream. When we arrived the air temperature was in the 90's and it seemed almost too hot to get into waders. But, don them we did and when we surveyed the stream from the bank and found nary a trout showing we decided to laze in the shade of the evergreens until things began to happen.

But not Hoagy.

After a few minutes of inactivity he

lit his briar, tucked his rod under his arm and waded to the head of the pool just below us. Naturally, the three of us on the bank directed a verbal barrage at him but the friendly insults stopped abruptly when his rod bent into an arc and his line began moving downstream. Eventually, he landed a magnificent male brook trout and in answer to the obvious question, he shouted back through a sheepish grin, "On a Little Orange Mayfly!"

Still unconvinced that it was anything but a fluke, we chided Hoagy about the dimwittedness of brook trout in general (which we didn't really believe) and of his catch, in particular. Whereupon he waded upstream and began to work back along our bank, catching good brown trout from under our very noses with alarming regularity! Needless to say, we lost little time getting into the water to try to emulate Hoagy's performance.

We have since found that trout don't *always* respond to the magic of the Little Orange Mayfly; that's simply too much to ask of any pattern. But besides the obvious occasions of high water, both early and late in the season, the pattern has produced surprising results under the most unlikely conditions.

There are several alternatives in materials that may be used to dress the Little Orange Mayfly. To add a little weight to the fly, use fine copper wire, obtainable in hobby or electronics shops, wound along the length of the shank. For extremely heavy water, lead wire may be used. And, of course, the fly may be dressed without additional weight if desired. The body may be of orange floss, preferably heavy, or of yarn. If floss of medium weight is used, doubling the strand will furnish the requisite bulk. Although fibres from a wood duck flank feather are indicated for the wing and throat, similar fibres from teal or mallard should work equally well.

Hoagy Carmichael modestly disclaims credit for the origination of the Little Orange Mayfly but its appellation is distinctly his. You may fit it into any category you choose—wet fly, streamer or whatever—but it seems to do its best work when manipulated in short strokes like a streamer fly.

Dressing the Little Orange Mayfly:

Left — Clamp a size #10, 2X or 3X long shank hook in vise and bind yellow tying thread to shank behind eye. Tie in a 5" strand of fine copper wire and bind along shank to bend. Then return thread to head position. Grasp the free end of the wire and wind in close turns around shank to a point behind eye, leaving ample space for head. Tie off and trim excess wire.

Right — Lay a length of orange floss (or yarn) on top of underbody, with one end overlapping eye. Bind with spiral turns back to bend, beyond underbody. Trim excess floss at head, as shown.

Left — Select a large cream or light ginger hackle and splay the barbules by stroking downward along center stem. Tie in hackle by its tip behind underbody and spiral thread forward to head.

Right — Wind floss to form tapered, medium-heavy body and tie off at head. Trim off excess floss. Then wind hackle forward in spaced turns and tie off at head. Trim waste hackle stem.

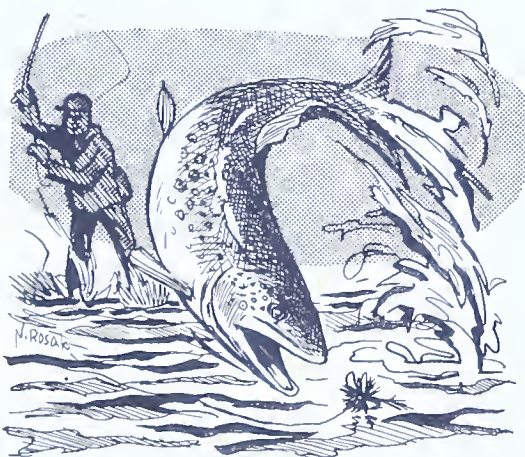
Left — Trim hackle uniformly to a length of about $\frac{1}{8}$ ". For wing, bunch the fibres of the tip of a wood duck flank feather and tie in as shown. Tips of wing should not extend beyond outside of bend.

Right — After trimming off excess wing butts, tie in a throat of wood duck fibres as shown. The throat should be considerably shorter than wing. Then remove waste fibres, build a neat head with thread and whip-finish. Lacquer head. OPPOSITE PAGE—The completed Little Orange Mayfly.

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

Taking a fly floating on the surface, a trout almost always turns and moves back down deeper in the water. So, a mere tightening of the line with a gentle lift of the rod is sufficient to set the hook of the fly into the jaw of the fish.



Fish dry flies with precision. Trout taking insects on the surface usually are only a foot or two deep and their range of vision, which varies with their depth in the water, is sharply restricted.

Eddies in a river or creek are spots where fish rest and feed. The current outside the eddy carries natural food. The fish take up their stations in the eddy where they do not have to fight the current and where they can see food that drifts within reach.

Spotting a feeding trout, the target for fly or bait, is often a tough task. It is strange but true that the larger fish often make the least disturbance in the water; and, particularly in a riffle, a feeding fish may escape attention.

Shallow water attracts fish in the spring and fall because the sun warms the water. In summer fish look for deeper, cooler water that is more comfortable for them.

Rough, broken stream beds and swirling currents make it easier for the angler to get fairly close to the fish without frightening them. Casts of 20 to 30 feet usually are long enough under such conditions.

Caddis nymphs and wet flies are tops for use in swift water or rapids that have a rocky or pebble bottom. This is the kind of water in which caddis nymphs build their little houses prior to the hatching period.

FISH FACT: There is a very good reason why fish always face upstream, into the current, when resting or feeding: it is the way they hold a selected position. If they faced downstream, the current could carry them out of their chosen spots.

Begin fishing a pool in the shallow tail, casting from either side, even if the best water appears to be farther up the pool. Fish very carefully and progress slowly toward the head of the pool. Good fish often prowl in the shallows of pool tails and careless wading can send them scurrying to safety in the deeper parts of the pool, putting down every fish within range.



Rubber ring floats are excellent "boats" for fishing calm water. The angler, clad in waders, sits on a seat in the middle of the ring, with flappers on his feet to help him move about. Most floats contain pockets for accessories and lures. The float is suspended from the shoulders by straps, thus enabling the angler to walk from place to place in shallow water.

Every stream has spots that can be fished only if the angler casts his fly directly across the stream or directly downstream. A dry fly is hard to use properly in such a situation. A good tactic is to change to a wet fly and let the current carry it into the target area.

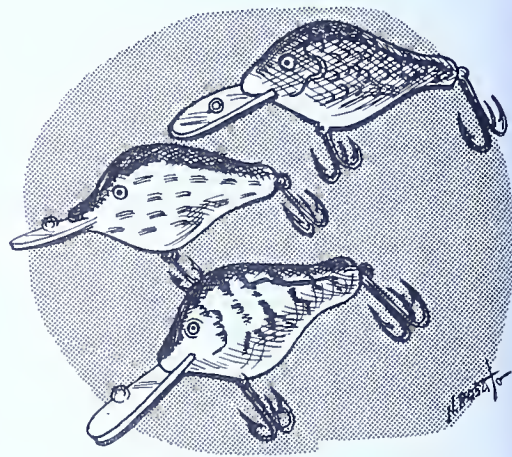
If you take a good fish from a certain spot of water, perhaps beside a ledged rock or on the edge of a bed of weeds, try that same spot again, a day or two later. If one bass or trout decided that spot was a good station others certainly will have the same instinct. And, a second good fish may have just been waiting until the first left before moving in.

A lunker bass or trout is a suspicious fish, or it would not likely be big. It's a safe bet that it will ignore a lure cast too close. But if that lure appears often enough within its reach and has not frightened it, chances are that the fish will take a crack at it.

Use short leaders, only three or four feet long, in fishing bushy brooks with flies or bait. Long casts are impossible under such conditions, and a long leader will have to be pulled down into the rod guides when a fish is hooked. The leader-line connection can cause problems at the top guide of the rod.

Shallows are always worth fishing at the crack of dawn. Bass and big brown trout that fed there during the night may not yet have gone back to deep water to spend the hours of full daylight.

Cast a wet fly with some slack in leader and line. The fly will stay deeper and move more naturally with the current. A tight line brings the fly to the surface and across currents, thereby not allowing it to move with the stream flow.



Colors and design of painting are important on plugs that run under the surface. A bass sees mainly the belly and shape of the surface lure, but it sees the body colorations of a sinking plug and is able more easily to detect a fraud. Both body and color patterns should match the natural baitfish in the water being fished.

Try a small treble hook, size 12 or 14, baited with whole kernels of corn, in fishing for carp. Put one kernel on each point of the hook. Carp have small mouths, therefore the smaller hooks can and should be used.

Never take your eye off a surface lure, whether a trout fly or a bass bug, after it alights on the water. A strike can come at any second, and in some unexpected places. If you are not paying strict attention you will not have a chance of hooking the fish.

Spinners with two blades are more effective than single blade models. The double blades cause more flash and commotion in the water and are more likely to attract fish.

In making leaders from bulk nylon, use stiff nylon for the butt and soft nylon for the tippet. The stiff nylon turns the leader over on the cast, while the soft nylon allows the lure to touch the water delicately.

Braided casting lines have some advantages over monofilament lines. They have less stretch, are not so likely to twist or curl, are more resistant to fraying, and their greater weight enables the angler to make longer casts.

Uncluttered water is not attractive to fish. A large boulder in a stream a sunken log or a stump, an eddy with some debris floating on the surface or an overhang of bushes or tree limbs offer a trout or bass a place of refuge and safety, and any bait or lure that comes close is sure to attract attention.

Crappies usually are deep-lying fish. To be most effective, the bait or lure must get well down below the surface to attract their attention.

Leaders or monofilament of four pound test is strong enough to hook and hold bluegills, perch, rock bass and crappies. It also has the advantage of making possible the use of very light lures and of helping the angler make delicate casts.

Nymphs of aquatic insects provide most of the natural food of trout. Most of the time nymphs move on or very close to the bottom and artificials should be fished at that depth.

Speed control is essential in fishing with a wobbling spoon or a spinner. Too fast a retrieve will cause the spoon to spin instead of wobbling, as it is built to do, and will make a spinner rise to the surface of the water, instead of staying at a good depth.

Use lots of bait for bullheads. Bait the hook with a big gob of worms or a generous chunk of cheese or stale meat such as liver scraps.

Scattered weed tips showing above the surface of the water are good signs of a bass feeding station.

Hit-or-miss fishing with wet flies or nymphs wastes time and effort. Instead, fish as carefully as with a dry fly. Drop the lures delicately and probe every likely spot.

Shallow and rocky stretches of water between deep pools are ideal places to fish, because bass and trout travel from the pools into the broken water to feed.



Bob Pryor's 44-inch Amur/Musky hybrid, left, is just a bit longer than his son, Brad, is tall! The 19-pounder was caught in the Susquehanna near Williamsport on the yellow jig.



Theodore E. Fitch, right, was trolling a Swim-Whizz on Crawford County's Coneaut Lake when he tied into that four-foot-long musky. Weight of the trophy was a bit over 28 pounds.

AQUATIC PLANTS . . .

management and control

That is the name of Special Circular 222 Natural Resources Series, available to pond or lake owners (or others interested in aquatic areas) from either County Extension Offices, or from Forestry Resources Extension, 111 Ferguson Building,

University Park, Pa. 16802. Prepared by R. G. Wingard, Professor of Wildlife Management Extension, T. D. Rader, Assistant Professor of Forest Resources Extension, W. K. Hock, Associate Professor of Plant Pathology Extension and Extension Pesticide Specialist and R. B. Hesser, Chief, Fisheries Management Section of the Pennsylvania Fish Commission, this 18-pager is more a

book than its "Circular" monicker might suggest. For those with an aquatic weed problem, this booklet is the means of getting off on the right foot. Profusely illustrated, it enables the pond owner to correctly identify the vegetation to be treated. Resource Professionals may also obtain the Aquatic Plant Control Herbicide Handbook from the same source.



It's difficult for landlubbers, the nonboaters, to see beyond winter's icy blasts during the month...

Ashore & Afloat

by Gene Winters

Every year about this time, my nonboating acquaintances love to do some good-natured heckling. You boaters out there know what I'm talking about. "Well, what are you doing with yourself all winter long?" Or, "I told you to find a hobby that lasted all year long." How they love, when ice covers the neighborhood pond, to taunt, "Going out in the rowboat today?"

Remember the field day the old gang had with us last winter? You'd think they'd be content now to let just one off-season slip by quietly. But, oh no, they've got a new greeting each time they spot you! They seem con-

vinced, too, that boaters are at least part bear and go into semi-isolation as soon as the temperature dips below 50 degrees. I love to watch the expression of nonboaters who also happen to be next door neighbors when I stick my head out the door into winter. "Not yet, Gene," they love to tease. "The boat's still in deep-freeze, remember?" Sometimes, in a moment of weakness, I pull quickly back into the living room, much like a groundhog whose time has not yet come.

These folks, bless their dear hearts, fight blustery wind and icy snow to reach their bridge club social or bowling league and can't begin to understand the contentment I find at home with my winter idiosyncrasies. I suppose I could try to expound on the delightful time spent cleaning and polishing the boating gear brought home for winter storage. I suppose I could attempt to describe how carefully, lovingly I box the marine radio-telephone to ship it out for its annual checkup. What chance have I to let them share the anticipation of its return? They'd never feel the ecstasy of watching the deliveryman trudge through waist-high snow, a sheepish grin on his face as he gently thrusts

the package into my outstretched arms.

Can you imagine my friends' reactions if I invited them to share the solitary hours spent splicing the lines needed for the season to come? They probably understand spit and polish when it comes to footwear but they'd be hard-pressed to share my enthusiasm for attacking mildew even before it begins to encroach upon the boat cushions. Most certainly they would find little glamour in the methodical inspection of PFD's or understand my concern over the most trivial sign of wear. They'd never comprehend a temporary sliver of cardboard tucked tightly against a shoe sole worn thin from breathing snow, just to juggle the family budget for a boat shoe sale with just a few more days to go.

My landlocked companions accumulate countless dozens of three hundred page catalogs containing merchandise of every definable description and discard them all with astonishing swiftness. Could they ever possibly understand how a four-page marine store flyer could ever thrill me more? They march, however, with almost military precision, in and out of January-February closeout sales,



... but its memories of fun-filled summer days afloat that carry the boaters through til next season.

while my shopping list spills over with realities that have yet begun to play.

Occasionally, to allay any well-wishers fears of my conversion to hermitism I venture forth into the social world where the conversation is often liberally sprinkled with earth-shaking wordage. Verbiage peppered with attacks on the boss or defense of bossism assaults on the conversationalist. Soprano-spiced voices oscillating tales of bedwetting, diaper rash, and junior proms. Still more chit-chat about market plunges, lousy mechanics and the price of men's haircuts. A fellow can't even begin to get in a good word about boating, no matter how hard he tries. But it serves a needed purpose: it reassures me I haven't in my pursuit of happiness abandoned the world; and, perhaps more importantly, the world hasn't abandoned me.

A new round of perplexity raises eyebrows when I begin to migrate around the countryside, attending every boat show that time and money allow. Sweeping in, thru, and around booths and display tables like a runaway zealot on a flea market binge. Cramming international orange litter bags with every piece of literature and catalogs thoughtful manu-

facturers care to tender. Material that will not, as suspected, be thoughtlessly discarded at exhibit hall exit doors, but be carried home to be painstakingly indexed and cataloged.

Still other motoring about leaves the neighbors shaking their heads sadly over my aborted courtesy visits to Uncle Harry, Brother Bruce and, of course, the mother-in-law. Excursions to the water's frozen edge... a checkup to ensure the boat's still nestled safely in its winter cradle. A peek under the ice-sheathed canvas with tender, loving care... a freehand spin of the prop that so faithfully carried its entrusted human cargo to playground after playground. An affectionate pat on the hull... a solemn, almost reverent, parting glance over the shoulder... and then the long ride home.

The countless snooze-and-cruise weekends in the recliner that help to pass winter's monotonous drudgery in a way that Sunday afternoon TV football no longer can. The daydream minutes that bring their own instant replays of summers past. The cruising, the swimming, the skiing, the socializing, the nights at anchor under the stars... it all flashes by. The sea has not forgotten me, nor I the sea.

Soon, dozens of photographs are sprinkled over the coffee table. The slide projector and screen hastily set up and a score of slide trays within arm's reach. And, then... a knock at the door... company calling, paying their Sunday respects. Gosh, it looks like the whole gang's here!

Can it really be my birthday? Already? Again? The projector is unceremoniously shoved into a corner of the room. But, amidst the opening of ribbons and bows, out of the corner of my eye, I spot countless hands seeking, searching, scanning, and passing around the boating photos, rescued from their motionless state on the coffee table. Soon, it seems like dozens of people are all vying for recognition at the same time...

"Gene, is it really that much fun?"

"Gene, do the kids actually beg to go along?"

"Does you wife enjoy the water as much as these photos indicate?"

"Gene, maybe, just maybe, if I took my first boat ride..."

"What's a good first boat and how much will it cost?"

Ah, "friends." Aren't they truly wonderful and precious?

And, you know something? A picture is still worth a thousand words!

FISH FILLETS WITH MUSHROOMS AND SOUR

4 boneless fish fillets
1/4 cup butter
salt

PERCH AND TATERS BAKE

1 pound perch fillets
(other fish may be substituted)
1/2 teaspoon salt
1/2 ounce can tomato sauce

PICKLED BLUEGILL FILLETS

bluegills, perch or crappies—
1 1/4 pound per quart
salt, non-iodized—1/2 cup per quart
water for brine and pickling,
unchlorinated if available
onions—thinly sliced, 1 1/2 cups per quart
vinegar—clear, distilled 5% acid
spices—your choice of pickling spices,
Maryland seafood or crab boil

CATFISH A LA FRANCAIS

3 or 4 medium sized catfish
1/4 pounds butter or margarine
3 cups cooked noodles
1 cup flour
1 tablespoon salt
1 teaspoon pepper
3 strips bacon (or one strip for each)
3 or 4 green olives

Put the flour, salt and pepper into a bag they are covered. Put them in a fryer. Remove from pan to a towel and toothpick to secure bacon and olive. Serve over noodles, and if you like, spaghetti. You'll never throw Mr. Catfish.

BROILED CATFISH

6 skinned, pan-dressed catfish
4 tablespoons lemon juice
2 teaspoons salt

BASIC BATTER FOR FRY

3/4 cup milk and 1 egg—beaten together
Add:
1 cup flour
1 teaspoon baking powder
1/2 teaspoon salt
2 tablespoons cornmeal

Beat all together, allow to set for at least 2 hours in hot oil (375° to 400°). Fish are delicious turning.

CARP WITH SWEET AND SOUR SAUCE

Sauce:

This may be prepared ahead of time.

Prepare a Chinese ginger root by peeling it and filling with sherry.

Ingredients:

1 tablespoon wine
1 teaspoon salt
1/2 teaspoon ginger juice

LITTLE BUSHKILL TROUT

4 whole dressed trout
1 teaspoon minced onion
1 tablespoon finely chopped parsley
3 tablespoons finely chopped mushrooms
1/2 cup melted butter
2 ounces brandy
5 tablespoons bread crumbs
5 tablespoons grated swiss cheese
1 teaspoon chervil
1/2 cup minced chives
1/2 cup tarragon



pepper to taste
salt and pepper inside and out. Line a well-buttered baking pan with onion, parsley, chervil, chives, mushrooms and tarragon. Pour melted butter over them. Cover with foil and bake in 350° oven for 10-12 minutes. Beat egg yolks with brandy. Remove foil and pour egg and brandy mixture over them and sprinkle with bread crumbs and swiss cheese. Dust with paprika. Return to oven and bake 5 minutes more.

TROUT CHESAPEAKE

10-15 inches each
bacon, cut into strips
1/2 cup lemon pepper
1/2 cup dried onion flakes
1/2 cup butter
1/2 cup white wine
Bisquick
1/2 cup of "Bay Seasoning" made up of
1/2 cup seafood seasoning and
1/2 cup coarse salt
Heat the bacon, lemon pepper and onion flakes until the bacon is brown and the heat down to medium. In a paper bag mix the Bisquick and the "Bay Seasoning". Wet the trout and shake in the seasoning bag to coat evenly, and place in the skillet and cook for approximately 8 minutes (underside of fish should be brown and crisp). Turn the trout. Add the butter and wine to replace skillet cover. Cook for approximately 7 minutes. Serves 4.

Charles G. Nitsche
Geneva, NY

AND COATED TROUT WITH SWEET AND SOUR SAUCE

2 pounds of trout or any other
fresh water fish
1 cup Bisquick mix
1/2 cup milk
1 1/2 cups coarsely chopped almonds
1/2 cup butter or margarine
1/2 cup brown sugar
2 tablespoons cornstarch
2 tablespoons soy sauce
1/2 cup vinegar
1/2 cup pineapple juice
1 1/2 inch pieces. Combine Bisquick mix and milk. Dip fish and then into nuts. Melt butter until golden brown. In a saucepan, combine sugar and stir in remaining ingredients. Cook over medium heat, stirring until mixture thickens—spoon over fish.

Mr. & Mrs. Charles E. Schrader
York, PA

SNAPPER WITH MUSHROOMS

2 cups cooked, cooled snapper meat
1 pint chopped cooked mushrooms
2 cups medium white sauce
1 tablespoon sherry

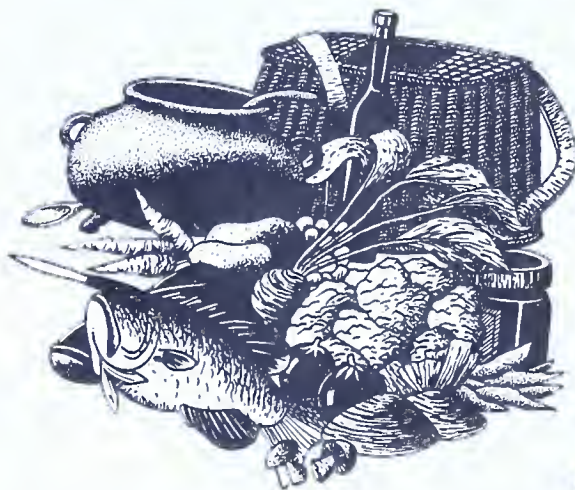
Heat terrapin and mushrooms in white sauce thoroughly. Add sherry and serve on toast. Serves 6.

150

137

73

Pennsylvania Anglers' Cookbook



Published By The
Pennsylvania Fish Commission
\$2.50

A Fish Fry is a fun thing . . . always has been . . . always will be. But—did you ever seriously consider how many taste-tempting ways fish can be prepared that are a radical departure from the usual "dip and deep-fry" method of fish preparation?

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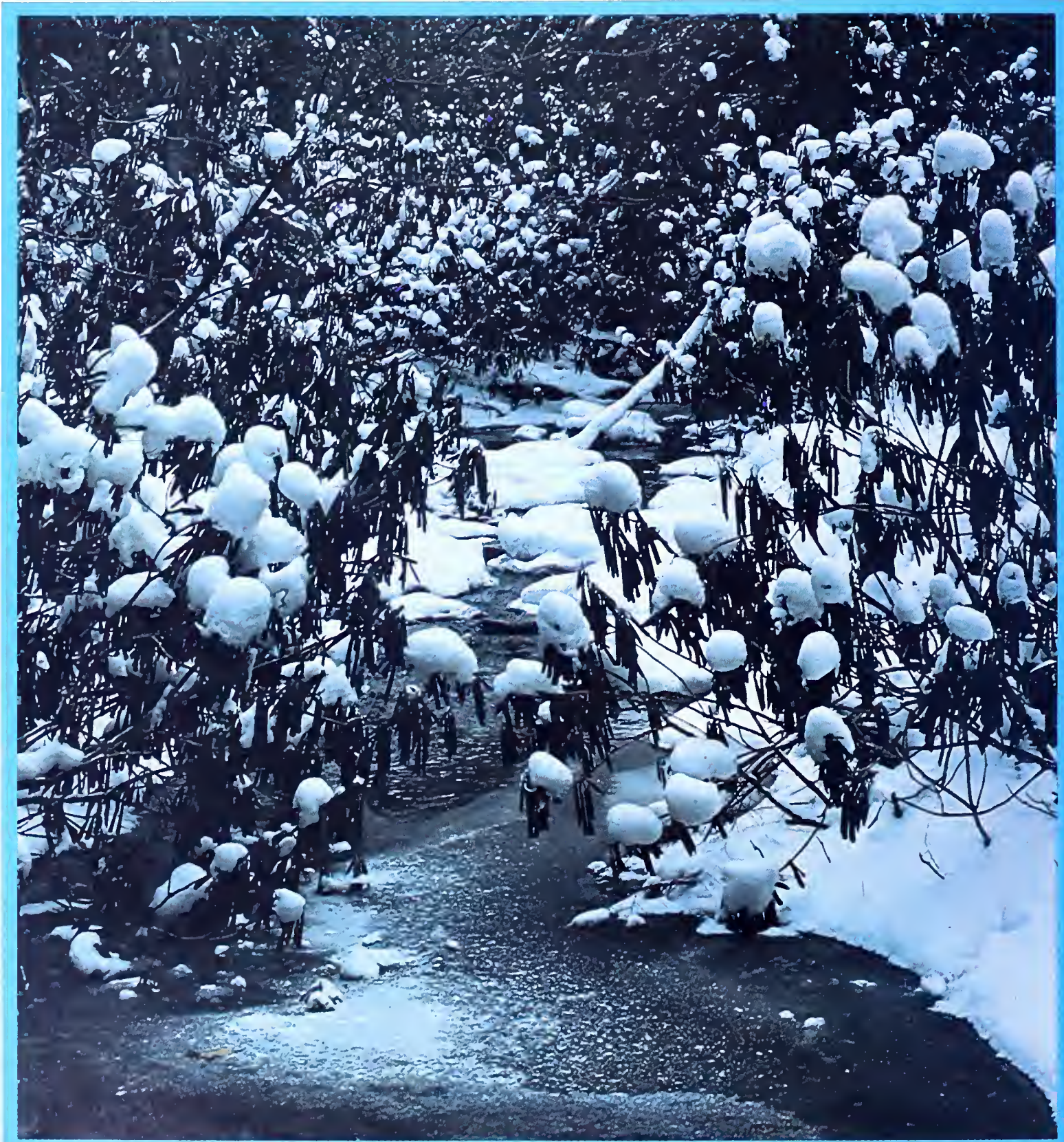
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PENNSYLVANIA

MARCH—1978

Angler

the
Keystone State's
Official
FISHING·BOATING
Magazine...

30
Single Copy



REASON FOR CONCERN —

The Mid-Atlantic Fishery Management Council, of which Pennsylvania is a member, has been much dismayed with attitudes and actions of the U.S. State Department in the implementation of the 200-mile limit bill. In general, the State Department tends to be much more liberal with stocks of fish within those 200 miles than competent scientific data would suggest. They have interfered with law enforcement by the Coast Guard and the National Marine Fisheries Service on "good cases" of clear violations by foreign fleets. The State Department spokesmen in the U.S./Canadian boundary negotiations are much more liberal with fishery matters than we can put up with. Those negotiations are, at this writing, not yet complete but our Council has been joined by others in demanding, among other things, that the United States should seek to preserve the maximum possible sovereignty over ocean territory and resources.

Consistent with that attitude toward the resources, there is now a news report describing the Department of State as "leading an embryonic movement by several federal agencies to oppose application of the National Environmental Policy Act to international activities of the government." Legal counsel for the Department was quoted as saying that: 1) the statute does not require federal agencies to prepare environmental impact statements on activities whose effects would occur in foreign countries; and 2) any such requirement might be seen as unwarranted intrusion in matters subject to the sovereign authority of other governments.

We cannot ignore anything that has an effect on us. Isolationism is a thing of the past. A Pennsylvania dairy farmer who can't sell milk because of radioactive fallout from Chinese nuclear explosions would find it difficult to understand the attitude of the Department of State. Likewise, natives in and around Yellowknife certainly would want someone sticking up for them, as they have just had a burned-out Soviet nuke satellite fall on them.

While we all recognize the signal accomplishments of the U.S. State Department in complicated and difficult conditions, and while we hope for their success not only in the Mid-East but all over the world, we don't think it's too much to ask that the U.S. Department of State have more concern for the natural resources and the people of the United States, the major reasons for our greatness.

Ralph W. Abele,
Executive Director

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

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ON THE COVERS

Some fishermen spend the days of late winter and early spring in preparation for the forthcoming trout season opener. Others would "rather be fishing," and go. Sucker fishermen, like Ralph Zerby shown fishing for them on Bald Eagle Creek, front cover, find March fishing a productive pastime. Channel cats, like those beauties caught by Gerry Complese at the Fort Hunter Access Area on the Susquehanna River, back cover, are always on hand—they'll cooperate with fishermen anytime!

Photos by Russell Gettig,
Staff Photographer

MONTHLY COLUMNS

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James F. Yoder, Editor

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NOTHING TO IT!

To the frustrated fishermen of Pennsylvania:

You only need five lures to get 90% of the fish in this state: (1) Jig, (2) Hildebrand Spinner, (3) Jitterbug, (4) Flatfish, and (5) Rubber worm. For the other 10%, a No. 6 or 8 hook with a split shot on the leader and a worm or minnow. This will take care of all the fish in Pennsylvania.

I am a fisherman 64 years old. My first fish was a bass on a Jitterbug at 14 years. 90% of the time I get fish. I hope this will help some of the people that read the *Angler*. My tackle box is filled with plenty of split shot — all sizes of spinners and the 5 lures.

JOHN A. ADAMS
Pittsburgh

ANOTHER VIEWPOINT —

Just finished reading the November *Angler*. All the articles are most interesting — wish there were a lot more.

Now the reason for this letter, the article in *Leaky Boots* from Robert Gdovin asking you to publish lures from time to time that will catch fish. Any and all lures will catch fish if they are fished according to the designer's specifications. Certain lures must be fished certain ways: some fast, some slow, some just below the surface, others on the surface. Fish are like we humans — to be comfortable, they like certain temperatures. All bodies of water have various temperatures at various depths.

You must study the likes and dislikes of the fish you are angling for. Equip yourself with a fishfinder that also records the temperature of the water at various depths and you will catch fish.

It's a known fact that you can take the best lure ever made and fish it at the wrong depth, thus wasting your time. But, take that same lure and fish it at the correct depth and you will catch fish, providing you know for sure that there are fish there.

There was not, nor will there ever be a lure made that will chase a fish and catch it.

In another article an organization

called Trout Unlimited is mentioned. I would like to know more about this organization — where to write to find out more.

PALMER M. MOYER
226 N. 13th St.,
Allentown, 18102

We've printed your full address, Palmer, for the benefit of some wide awake TU'er nearby. You'll be hearing from them! Ed.

WILLING SUPPORTER!

Enclosed is a check for \$7.50. Please renew my subscription to the *Angler* for three more years.

I would also like to thank you for the outstanding job done by the Fish Commission. As a nonresident, I really notice the fine job you do. The fishing in Pennsylvania is among the best anywhere. I am particularly impressed with the trout and musky programs. I would gladly support any increase in nonresident license fees as I can see my money at work, thanks to you. Other states, including my own, should use the Pennsylvania Fish Commission as a model. I am amazed at the diversity and quality of fishing, not to mention access areas, hatcheries and law enforcement. As a nonresident I am envious of the sportsmen of Pennsylvania who have such a fine Fish Commission.

ROBERT M. CLEARY
Jamestown, N.Y.

SEARCHING —

One of my fishin' pals told me that the Pennsylvania *Angler* did an article on musky fishing in the Lehigh River in Allentown. But it was quite a long time ago. I get the Pennsylvania *Angler* but I'm a new subscriber and only have back issues to September 1977. Is it possible to get the issue I want? I don't know the year or month it was in. Thank you for your time.

DON ARMBUSTER
Allentown

Sorry, Don, we've searched our files for a *feature article* on Lehigh River musky fishing and can find none. It's possible that fishing for muskies in the Lehigh was mentioned under another title; but, without more to go on, we can't be of much help. Yours is a common request — one for information about an article without mentioning either a month or year. We realize that it's not always possible for our readers to supply us with complete information, but it's just as difficult for us to track down subject matter *that might not be indicated in a title* unless we have more to go on. In short, help us help you. Ed.

PANFISH BUFF —

Enclosed please find my renewal payment. Thank you for sending the polite reminder. I overlooked the previous one. Are there any articles on fly fishing for panfish coming up. If not, please include one if at all possible. I enjoy the magazine very much and read it from cover to cover. Keep up the good work.

TROY MILLER
Clarks Summit

Keep watching and reading, Troy, we'll find something to your liking before too long. Ed.

HOMESICK —

Along with my subscription renewal just can't help saying that I have received 11 issues of the *Angler* since being here in Berlin and have enjoyed each one immensely. You have managed to make me homesick 11 times. I can't wait until I can get back to Pennsylvania so I can once again enjoy the benefits of being a Pennsylvanian. I miss the fishing very much.

DAVID C. WOLF
Berlin, Germany

LIFETIME PACKAGE?

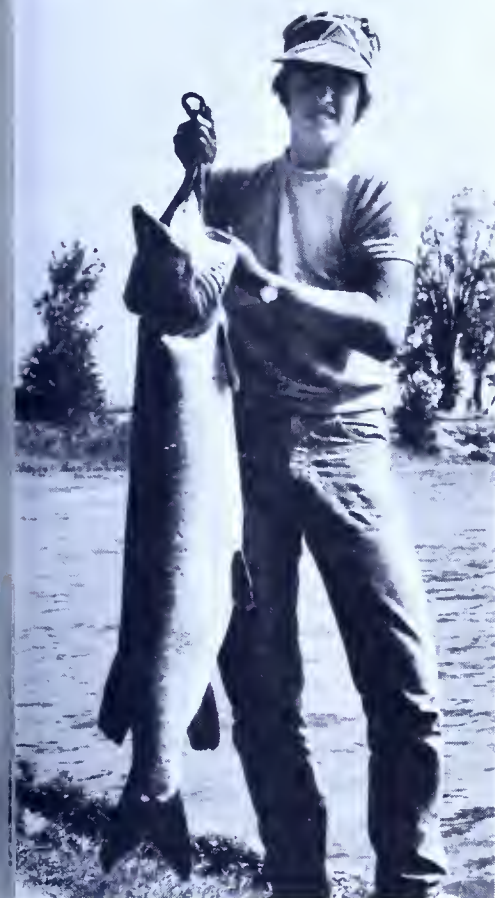
Enclosed is my renewal fee for three more years of Pa. *Angler*. My wife asked if there is a "lifetime" subscription package available — I become neurotic when my subscription begins to expire. Thank you.

VINCENT J. MAJIKO
Levittown

P.S. I have an index of Lively's and others fly patterns which I use in my "Intramural Fishing Program" at Armstrong Middle School, Bristol Township. Keep up the excellent work for sometimes the only way some students learn nowadays is when they have a diversion from the subject matter. The *Angler* magazine surely fills this "diversionary" tactic.

We hate to be a part of anything which detracts from the generally accepted curriculum but as long as it's fishing, well, first things first! Right?

Reading between the lines, Vince, we're encouraged by your faith in the Fish Commission's magazine, i.e., your absolute certainty that you'll want it for "life." We appreciate the support but, unfortunately we have no provision for "lifetime subscription packages." Just bite on a nail, grab the bedposts, or whatever it is that neurotic do! Ed.



Best trolling was the "tip" that Mike Schirck, above, picked up in the Angler. His musky, a 7-inch, 32 1/2-pounder, was caught off Stocker Island in Lake Pymatuning, a hot spot for muskies, according to Mike.

TWO CENTS"... OR SO —

I read with interest the article in the June issue of the Angler concerning the Fish Commission's decision to step back and take a new look at the policies on special regulation waters, especially trout waters. Being deeply interested in trout fishing, I can't resist the temptation to put my "two cents."

I hope the PFC action results in overall improvement in our trout fishing and better management of our trout waters. I have mentioned in previous correspondence my thankfulness for the cold-water resource we have in Pennsylvania and the general good job the PFC does to meet all the varied challenges thrown its way. It's difficult to please everyone and sometimes the "politically" expedient holds sway over what might be a more sound biological approach. I find a somewhat paradoxical difference in the way our trout waters are managed compared to the attitudes held by your brother organization the Pennsylvania Game Commission. The shortened turkey season

for 1977 is an example. It's pretty clear that for various reasons the turkey population has suffered over the past couple years and that action was required. Yet, specific management to maintain population does not seem to have taken effect in regard to our trout waters and wild trout population, even though the trout is a resource that doesn't necessarily have to be killed each time it is taken.

It appears to me that a large block of evidence is building from all over the country that indiscriminate stocking of streams, especially those that maintain a wild trout population, results in a generally unfavorable long-term overall effect. On the other hand, the evidence is just as strong that if a stream is managed to favor a wild trout population (on quality water), you can't do this successfully and allow unmanaged removal of fish from the stream. Most streams especially in Pennsylvania have more fishing pressure than natural reproduction and holding capacity can balance against. Therein, of course, lies the problem. How do you do manage the waters in a biologically sound natural state and still please the many license holders who are "paying for" those stocked trout and think they are entitled to catch an unlimited number (at a rate of 8 per day, of course).

It has been my experience that trout fishermen fall into 3 basic types: 1. The person who fishes for trout early in the season to more or less pass the time until the season is open for other fishes and doesn't care too much whether the trout are wild or from a hatchery. 2. "Big trout" anglers who concentrate mostly on larger fish and usually use bait as hardware and usually keep the large fish they catch. 3. Persons who have trout fishing as their primary or perhaps only angling interest. These anglers include a lot of fly fishermen but a significant number of bait and hardware users also. I think a significant attitude of most of this group is that if they really had to choose one way or the other, they would place quantity of fishing above numbers of fish to be killed.

I would classify myself a member of the third group, one which seems to be, hopefully, growing in numbers. Hopefully, the PFC restudy of policy will enable a more satisfactory compromise for all three groups.

Personally, I would hope that our better quality trout waters (and based on my experience we have more than one might think) could be managed such that at least a portion could be handled putting quality of fishing foremost and killing of fish secondary. Perhaps the new Vibert box system or supplementary stocking of some fingerling trout could be tried if necessary. The current practice of setting aside sections of streams, which are

marginal waters in some cases, and stocking brood trout, has not provided quality fishing in my humble opinion. The present system does have its bright spots, of course, the limestone streams being notable.

Substantial sections of our good streams and especially those areas where fly casting is difficult, but no problem for bait or hardware casting, could be left unaffected for those persons who like to fish for large wild trout or for persons who want to keep fish to eat.

Marginal streams could continue to receive heavy stockings in the early season for the people who fish mostly during this period and would just as soon catch a stocked trout as any other.

I can think of a number of streams in my area such as the East Branch of Tionesta Creek, Pithole Creek, Caldwell Creek, Pine Creek (Titusville), Thompson Run, Four Mile Run, Two Mile Run (Sheffield), Big Sugar Creek to name a few. These streams all have significant natural reproduction and provide an estimated 65 miles of stream. Yet only one, the West Branch of Caldwell Creek, has a section managed to provide quality fishing. Based on my personal results, it has been successful in this and I have heard no one complain of being deprived because of this.

In closing, I hope you might find room to print this in an issue of the Angler. Perhaps it will generate correspondence to indicate whether I am all wet or other anglers agree to some extent. Thank you for your consideration.

JAMES F. CLARK
Meadville

RESPONSE

The management of trout, through regulation and the provision of recreation by introduction of hatchery trout, is a most complex issue. The complexity involved arises as much from social factors as from biological/environmental factors. In Pennsylvania we have a rather substantial trout fishery. In the past most of the emphasis was placed on the social aspects of trout fishing. We have developed a large catchable trout program and a significant special regulations program on a case-by-case basis with a rather sparse accumulation of data relative to the overall resource. All things considered, we've been pretty successful in building a good program, but we hope to have an even better program by considering all aspects—social and biophysical—of what it takes to have a trout fishery. Completion of our statewide inventory should give us the basis to

(continued on page 22.)

The spring peeper
is Pennsylvania's traditional
springtime harbinger. In many parts
of the state its choruses can be
heard in March while snows
still cover the land.

Taking A Closer Look

by Tom Fegely

PENNSYLVANIA'S AMPHIBIOUS ELVES

Sometime soon, along about mid-March in some sectors of the state, Pennsylvania's "amphibious elves" will be awakening from their winter's sleep to send choruses of song across our waterways and wetlands.

Most notable among these harbingers of the more gentle season is the diminutive SPRING PEEPER (*Hyla crucifer*). Found in everyone of the state's counties, this moist-skinned midget is more often heard than seen. Its bird-like whistle pierces the still cold night air, often combining with hundreds of its kind to give the pulsating, rhythmical sound of some eerie, treble-keyed machine.

The peeper, seldom growing to more than 1¼-inches in length, is most readily identified by an "X" or cross on its back. Its lesser-known cousin, the GRAY TREEFROG (*Hyla versicolor*), cannot be mistaken for the peeper because it more closely resembles a toad. Its rough, warty skin has attributed, in part, to its nickname of "rain toad" in some places. On damp and rainy nights, from spring to fall, this camouflaged tree-climber can be heard sending out its unusual loud, resonant trill from some high spot.



The treefrogs are represented by about a dozen different species in the eastern U.S. but only these two can be found in Pennsylvania. The gray treefrog dwells in less than half of Pennsylvania's counties.

All of the *Hyla* (treefrog) clan is characterized by long legs, a slim waist and toes tipped with adhesive discs or pads. Climbing and jumping from one vertical surface to another is second nature for these wetland acrobats.

Though the spring peeper ranges from bronze to green throughout its range, the gray treefrog is the real master of camouflage and color change. One moment it may be gray

and seconds later bright green. Whether secluded in the deep-ridge bark of a tree or hunting small insect on twigs and leaves, *Hyla versicolor* is difficult to find.

Though this pair of Pennsylvania treefrogs is quite small, the CRICKET FROG (*Acris gryllus*) has the distinction of being Pennsylvania's smallest frog. Its descriptive name comes from the fast-paced "grick-grick-grick" call which is very similar in rhythm to that of the cricket. The actual sound, however, is more similar to the noise made by clicking two pebbles together. Its primary range, where it has been recorded in 11 counties, is in the southeast section of the Common



The tiny treefrogs and chorus frogs have excellent camouflage.

wealth.

Two other amphibious midgets round out the state's offering of tiny frogs. These are the CHORUS FROG (*Pseudacris nigritis*) and the MOUNTAIN CHORUS FROG (*Pseudacris brachyphona*).

The chorus frog actually has three distinct sub-species residing in Pennsylvania but only the expert biologist would be able to separate one from the other. All three of them are confusingly similar in appearance — having a pattern of three dark lines and three rows of dots.

The rarest of these sub-species is the New Jersey Chorus Frog which has been found only in Bucks County. The Eastern version has been collected in 13 eastern and central counties while its Western cousin is restricted to the state's Appalachian Plateau region.

Though the toes of the chorus frogs are equipped with small adhesive discs, they seldom climb higher than the low branches of shrubs and small trees. Here they broadcast their spring mating calls which sound like "reap-reap-reap," each "p" being accented by a rising inflection.

The mountain chorus frog is often confused with the spring peeper though its call is entirely different. In fact, rather than a "peep," the choruser's call has been likened to the sounds make by an ungreased wagon wheel.

It, too, gets a jump on the season by doing its mating as early as March — often in the temporary waters of ditches.

A good way to remember the identifying field mark of this little-known creature is that it has "reversed parentheses" on its back. That is, two curved stripes on its back bend inward and on some individuals actually touch each other at the center of the back. This gives the appearance of a "cross" and confusion with the spring peeper.

Southwestern Pennsylvania is the prime range of the mountain chorus frog.

Pause from your work some evening later this month and lend an ear to the out-of-doors. Though snow may

We, too, regret author Fegely's decision to bring this column to a close — it has been one of our most popular columns, judging from our readers' letters. But, lest his remarks and ours lend a note of undue finality to his appearance on the *Angler's* pages, rest assured that Tom will be back as often as his schedule permits, still taking that "Closer Look" at the Keystone State's outdoors from unusual angles.

Worth mentioning here is that, in addition to grinding out those "80 nature stories . . ." since '68, Tom Fegely has been equally busy in another area — he has had four books published by Dodd Mead:

still linger in the woods, Pennsylvania's tiny songsters will be out announcing the coming of a more gentle time.

With this column I somewhat regretfully "put to bed" the monthly "Taking A Closer Look" column. Since my first Pennsylvania Angler article in 1968 on through the birth of this column in April of 1972 and up until now, I've penned and photographed better than 80 nature stories which I hoped would be of interest to Pennsylvania Angler readers.

My present full-time position as Outdoors Editor of the Allentown Call-Chronicle Newspapers, after having taught school for 14 years, has opened up some new opportunities which I plan to pursue.

In the meantime I'll be back several times a year with articles similar to my columns about all of Pennsylvania's cold-blooded creatures. Of course, there's always plenty of fishin' stuff to write about and I hope to do some feature stories along that line, too.

I sincerely appreciate all the letters I've received in response to the column — and your enjoyment of it has made it a rich experience.

And, don't forget, "Take a Closer Look" . . . each time you venture forth to that favorite fishing spot.

Tom Fegely



World of The Woodlot, Wonders of Wild Ducks, Wonders of Geese & Swans, and Wonders of Freshwater Fish.

Last May Tom organized and led a photo safari to Kenya and is now working on his fifth book, *East African Wildlife*.

Suckers Galore!

by George E. Dolnack, Jr.



Plans for next month's trout opener overshadow a lot of fun and action when there doesn't appear to be much else going on. Anglers who like to catch fish are now hauling out the suckers, a finny friend placed down at the bottom of the list when it comes to looks, eating quality and fighting ability.

You won't get much of an argument about the looks and the fighting, but when it comes to eating, the sucker can be a real treat. Many fishermen shy away from them mostly because it is such a bony fish. And it's true. But, getting around the bones is easy once you get the hang of filleting the sucker.

Early season sucker flesh is firm, white and flaky. Pan-fried, deep-fried, made into patties or *kedgeriee*, it is a delight to eat. No precooking preparation is necessary but some folks soak the fillets in a rinse consisting of a gallon of water, 2 tablespoons baking soda and 2 teaspoons salt.

Though the garden hackle or hunk of nightcrawler fished on the bottom is tops for suckers, they can also be taken on wet flies. Try fishing a nymph — light-colored in roily water, darker ones in clearing water — right on the bottom of a pool below a riffle.

There's plenty of room along our streams, so why not join the "forked stick crowd" now? You won't be disappointed.

KEDGEREE:

An Indian (west and east) dish of fish and rice curried.

1 pound cooked fish (cold). Dried fish can also be used.

¼ pound rice

2 hard-boiled eggs

2 ounces butter

salt, pepper and cayenne to taste.

Boil and dry rice. Then, flake fish. Cut whites of eggs into slices and grate yolks through sieve or tea strainer. Melt butter in pan, add fish, rice, whites of eggs, salt, pepper and cayenne. Stir over heat until ingredients are hot. Place mixture onto a hot dish. Press into a pyramid with a fork and decorate with yolk of egg. Serve as hot as possible. Time to prepare — about one hour; servings — 5 or 6.



Sucker fishermen precede the spring peepers in making their debut along our waterways. A favorite spot on the Raystown Branch of the Juniata River is Snakespring Valley Run, near Bedford.



The firm flaky white meat of cold weather suckers is a tasty treat. Fillet suckers by conventional method; then, cut out the "Y" bones. Run your knife point over the fillet from head to tail to detect any remaining bones. These can be lifted out with the knife point or a pair of tweezers. After removing skin, you'll have a pair of tasty fillets for the pan.



Guests . . .

by Keith C. Schuyler

Spring is officially here.

Regardless of what the weather might be on the other side of the storm windows, our thoughts turn seriously toward the months ahead and the recreation they will provide. Except in the higher mountains, the white expanse of monotonous beauty is now broken up by green bordered ponds, lakes and streams with their contributions of blue, green and brown. The puff-packed snowflakes have lain too long in the warm breath of the maturing year and they have leaked into the ground and onto ice which also succumbed to the sun. Water after water has collected upon the land and upon the water to give service during the warm summer session ahead.

Water, like fires and forests and fuels and air waves, is the semi-servant of man. However, it is the least predictable and the toughest to control of all the elements. We cannot live without it; we live with it on its own terms. We can move mountains, we can generally control fire at our option, we can expend fuel, and even the air is more servant than master to man.

But water is as inexorable as time. We can dam it and we can damn it, but it will go to sea and return again. And it does so at its own time and pace. We can sleep on its pleasant and yielding pillow, or we can smash our bodies against its placid surface. If it goes on a rampage, we have no alternative but to get out of its way or to ride out its moods. It permits us to use it, but it will not allow us to abuse it except at our own peril.

Despite the unpredictability of water, we have acquired enough knowledge to live with it, to enjoy it, and to be sustained by it. As the weather warms we plan to fish in it, wade in it, swim in it, submerge ourselves in it, ride upon it and drink in its beauty as well as its substance. But each activity has rules written by water itself.

You would be bored by a list of the man-made regulations which have man-made penalties for infractions. Each of us is sufficiently aware of water's own laws that we should have no difficulty living with it if we simply apply common sense. We know it can be capricious because, like us, it is also subject in some degree to the other elements. The pleasant stream may vent its anger against the land and man if its watershed is devastated by fire. It may fight back against the intrusion of inclement air or burst through man-manipulated earth that attempts to block its way. If

we ignore its roar, we must prepare to withstand its rage.

This great friend, the water, permits our intrusions if we follow its rules. But, even the clean cut of a canoe on a placid lake that provides an instant replay of a magnificent sunrise demands more than appreciation of the beauty it creates and disturbs. The canoe must follow a trail that is uncluttered on the surface or just beneath to find its safe way. Its operator carries a responsibility no less to himself than the captain of an ocean liner. He is enjoying a privilege whether it is for personal enjoyment or commercial necessity.

When we take advantage of all that water has to offer, we must be alert to all the hazards that are present. We must be ever aware that our use of the water imposes upon us the capability to cope with it at all times. In an instant we can become engulfed by the water we ride upon. Man has not yet acquired the intelligence to make it mandatory that all humans be taught to live in water as well as upon it. Those unable to swim most certainly should know how to and be prepared to save themselves if they are plunged into water.

But, the ability to sustain oneself in water is not enough. For water can be cold as well as pleasant, and even the expert may find a flotation device the only means of rescue.

When water takes on speed, its dangers become obvious. When man takes on speed over water, he sets up the ever present possibility that water will resist his speed with the same ferocity that it can exhibit at its own pace.

Man came lately upon the natural scene, and water had long established itself before his arrival. He found it useful, and necessary, but he was the intruder. Consequently, it is his responsibility to treat it with great respect and love.

In the scheme of civilization, man acquires temporary title to parts of the water and the land which bounds it. Even though his personal possession is fleeting, he has rules which cover the conduct of those who use it.

Each has the necessity to properly enjoy this water and this land if we want to preserve the man-provided privilege of doing so. Our footprints should never be visible upon the land or the water where no other footprints are visible. For, at some time man acquired this as a possession from a permissive world that was perfect in its way. Our presence transcends any laws of man or the water itself.

We are guests of God.

More Than You Ever Wanted to Know About Worms

by Arthur J. Michaels

Let's suppose, just suppose, that worms could speak . . . maybe they can? But, in our tongue . . . wouldn't it be convenient if we could communicate, find out their preferences . . . their dislikes . . . care and feeding would be much less a problem than it is now. An interview, then, based on the author's research, would go like this:

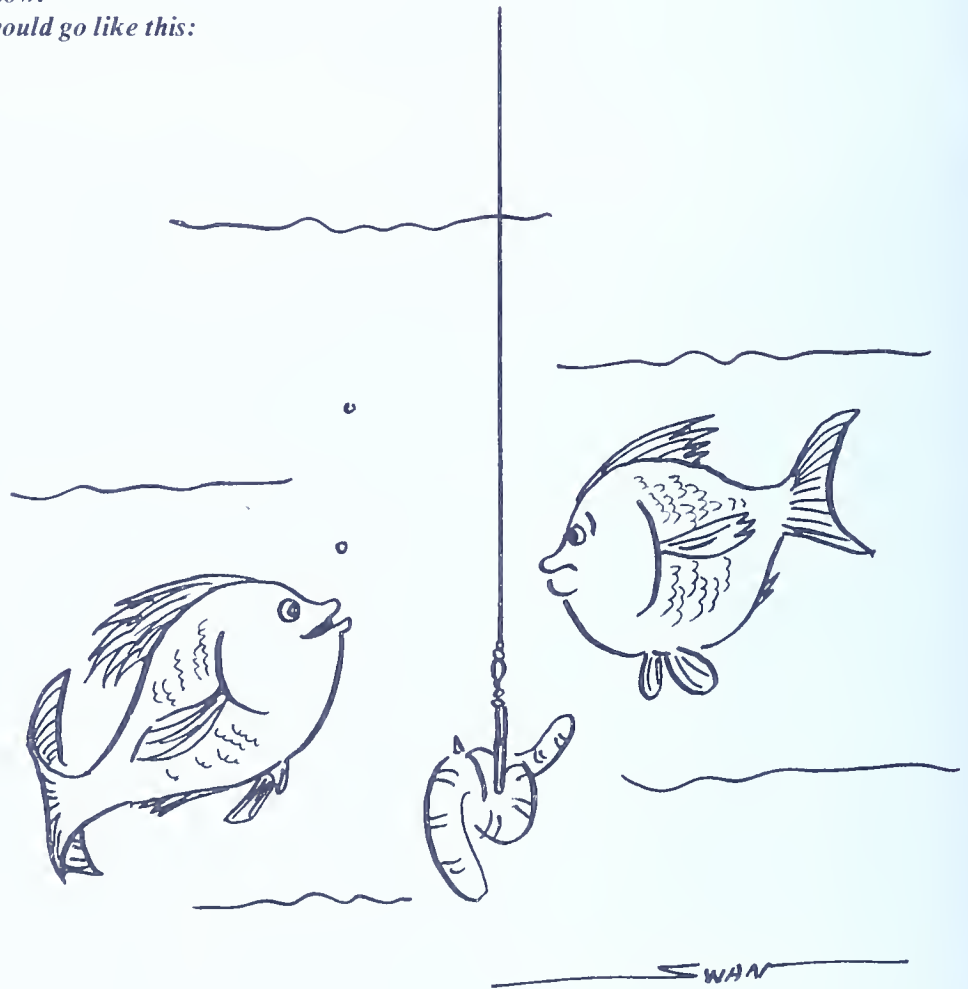
Nightcrawler: "Anglers have depended on us earthworms for centuries as their most productive bait. So versatile are we that when they dangled us in front of arctic char that had never before seen worms the char gobbled us right up!"

Red worm: "That's right. We're consistent and dependable producers for simple bobber fishing as well as those esoteric, sophisticated fishing trips. But to be a *super* worm angler, you need to get to know us intimately. The more you know about our habits and ways, the more skillfully you'll use us to catch fish."

Nightcrawler: "Have you ever wondered *why* we're one of the best baits for fishing? The reason is that we're highly nutritious. Two-thirds or more of our dried weight is pure protein, and this makes us an important food for other animals as well as fish. Certain birds, beetles, reptiles, and mammals also depend on us as food."

Red worm: "This might surprise you, but some of those mammals that value us as food include *people*! We worms were considered to be a delicacy in medieval France. Today, people in parts of Africa eat us *uncooked*, and in China we're fried as an epicurean treat!"

Nightcrawler: "Yech, you say? Did you know that there are more than one hundred species of earthworms around the world and more than twenty species of earthworms in Pennsylvania, New Jersey, and New York? Your zoologists have classified me with other earthworms, leeches, and ocean worms in the phylum Annelidae, and my scientific Latin title is *Lumbricus Terrestris*. But millions of anglers know me simply as "nightcrawler." I am the most com-



"I THINK I'LL WAIT FOR AN ARTIFICIAL LURE—WORMS ARE SO FATTENING."

mon species of fish bait.

"And did you know that I'm most likely *not* a native of North America? Scientists think that native North American worms were killed during the last ice age, and that I was brought here by European settlers."

Red worm: "My origin isn't North American, either. Two of my species common to American anglers originated in Europe and Africa.

"I'm smaller than my nightcrawler cousin — my more delicate appearance makes me a better bait for skittish and wary trout. If you buy

bait, chances are you'll get nightcrawlers when you ask for worms. If you want me instead of the larger nightcrawlers, specify 'red worms' when you buy."

Nightcrawler: "Since we're such productive baits, have you considered raising us at home? It's easier than you think if you take care of us properly. With a little care and attention, we'll provide an endless supply of plump, juicy bait."

Red worm: "One way to raise hundreds of us with little effort is to make a mulch pile for our home. A

cool, shady spot in back of a garage or barn is perfect. Pile heaps of grass clippings, leaves, and soil, and deposit two hundred of us there."

Nightcrawler: "We'll stay healthy and reproduce if conditions of moisture, temperature, food, and pH (acidity) are right. The main difference between nightcrawlers and red worms is the temperature we prefer. We nightcrawlers can't take it above 50 degrees for long. That's one reason why we're always refrigerated when you buy us at the bait store. To keep us alive on a fishing trip, keep our temperature down. The severe change from a 40 degree refrigerator to an 80 degree boat bottom or tackle box will surely kill us quickly and ruin your fishing plans."

Red worm: "We red worms like it to be 65 to 75 degrees. What's right for us will readily kill nightcrawlers, so if you put us together in your mulch pile, make sure it's plenty shady."

Nightcrawler: "We both favor the same conditions of pH. We'll tolerate a pH between 4.5 and 8.4, but we'll thrive best with a pH of about 6.5. Keep tabs on the acidity of our mulch pile home with a litmus test."

Red worm: "And we both need constant moisture, but we don't like extremes. Never allow our mulch pile to be soggy or inundated, and never let it dry out."

"We don't have lungs like you and we don't have gills, either, like fish. We breathe through our skin along the entire length of our bodies. That's why we hightail it to the surface when it rains — we often get washed into lakes and streams this way. Fish us right after it rains and you're sure to come up a winner!"

Nightcrawler: "And if you want us to be plump and juicy, feed us good food. As we tunnel, we worms ingest soil, but we digest only the organic matter in the soil. Coffee grounds, vegetable waste, cornmeal, or oatmeal will keep us happy. Don't mix our food in the mulch — just sprinkle it on top."

Red worm: "You can also raise us indoors, and we'll be happy as long as our living conditions are the same as our outdoor mulch pile. Keep that temperature down during warm months, and don't let us freeze, either!"

"Use a wooden crate covered with

screen material for good ventilation, or if you make enough holes in the top, a styrofoam ice chest works well, too. Fill two-thirds of our indoor home with commercially prepared worm bedding."

Nightcrawler: "Whether you put us in an outdoor mulch pile or an indoor bed, leave us alone long enough and we'll increase our numbers. Once you set up our home, don't keep looking in on us or disturbing our mulch pile at three o'clock in the morning to see if we're still breathing! Disturb us only when you check our living conditions, feed us, or take us for bait."

Red worm: "Follow this advice and in a few weeks, our eggs will hatch. It takes our young worms about four or five months to mature."

Nightcrawler: "In case you don't know, we worms are hermaphroditic. This means that each individual worm has both seminal vesicles and ovaries, but a union between two worms must occur to fertilize the eggs."

Red worm: "If conditions remain constantly good, we will continue to reproduce. Usually in summer and winter, in conditions of cold and heat with dryness, our activity slows. We're most productive in spring and fall, but if you raise us indoors this winter, by opening day in spring we'll supply you with plenty of worms for a season's worth of fishing."

Nightcrawler: "Besides raising us in or near your home for bait, you can

dig us up in the field. If you look for us in places that duplicate our preferred living conditions, you'll find us in abundance. Carry a small spade or army-type trenching tool with you, and use it to dig us up on a fishing trip. But, don't go digging around without seeking the landowner's permission."

Red worm: "As you get better at picking likely looking spots, you'll be digging less. Expert worm finders use a small shovel to scrape away surface leaves and brush to find us — rather than to *dig* for us. These worm experts have developed a keen instinct to know where to find us with very little effort."

Nightcrawler: "And speaking of very little effort, this winter, while you're dreaming about opening day, start an indoor worm farm with about one hundred of us. Buy a styrofoam ice chest or picnic box, poke holes in the cover, and fill it with commercially prepared worm bedding. Raising us both indoors in winter and outdoors in warmer weather is easy — just duplicate our preferred living conditions and take care of us properly. We'll do the rest!"

Red worm: "Now that we've revealed our innermost secrets of survival to you, you should use us with ever-increasing skill on your fishing trips."

Nightcrawler: "After all, millions of anglers over thousands of years just *have* to be right!"

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A Bridge to Better Angling

by Gerry Kingdom

*Throughout Pennsylvania,
bridges can connect you to some
of the greatest angling action of all!*



Anglers and boaters alike find pleasure aplenty under this lofty Delaware River bridge near Narrowsburg, New York.

Be it for the motorist's need, the tourist's pleasure, or the angler's convenience, bridges play a prominent part in the daily life of the Keystone State.

For the motorist, bridges help shortcut the problems of daily commerce. For the tourist, the commonwealth boasts some of America's most treasured bridges — more covered bridges in use than any other state in the union, and national historic landmarks, like the Penn-York Bridge that shadows one of the commonwealth's most popular fishing holes — the Lackawaxen Pool. And for the fisherman, Pennsylvania's 20,000-plus bridges span some of the best fishing waters to be found anywhere.

Indeed, it's a rare Pennsylvania angler who hasn't at one time or another cast his line into the shade beneath a bridge with a profound certainty that there alone lay a sizeable lunker.

From my own earliest childhood days, when a rod got heavy after five or six casts, to this very moment, there is something about a bridge that beckons me to test the flowing waters beneath it.

Perhaps the attraction began with a bit of luck I once had, when, as a would-be angler, I raised a hefty rainbow trout from under a long since forgotten, and undoubtedly destroyed, wooden overpass that spanned a Pocono creek.

From that day to this, passing by a bridge without casting a lure or a bait beneath it is an unpardonable sin.

Bridges provide a tempting attraction to all anglers. And to most fish. To the angler, it's an instinctive and often unexplainable feeling that under that mass of steel, concrete, or wood swims the lunker of his dreams. To the fish, it's an instinctive, and often explainable, barrier to survival.

For some very good reasons, fish are found under bridges that span both rivers and lakes. Let's look at river spans first.

Because deep holes are dug by restricted currents, large submerged abutments under river bridges are often encircled by deeper water. Fish find these deep-water access areas especially attractive and instinctively gather there.

Inviting as well is the fact that these support structures provide a break in



Anglers ply the shadows beneath the Susquehanna River bridge at Falls, in Wyoming County, a good hotspot for bass, walleyes and muskellunge.

These anglers found a crappie bonanza under the bridge at Lackawanna State Park at Wallsville. Bridges over lake "arms" are crappie havens.



the current. Thus a hungry predator needn't waste energy fighting heavy water pressure while seeking his prey. He can wait behind the bridge support for his dinner to come to him.

Overhead, the bridge protects sun-sensitive fish from solar discomfort, and even provides an occasional discarded morsel of food.

Bridges that span lake coves or "arms" are also attractive to fish. Because their shoreline approaches often form an hour-glass-shaped constriction connecting two parts of the lake, they help to point out a narrow path that migratory fish must take. Since large predatory fish may be eyeing the same migratory path, a lake bridge like this could lead you to a lunker.

Bridges lure anglers almost as well as they do fish.

For the nocturnal angler, bridges provide a double-barreled bonus. Not only do they offer easy access, but their lights bait large predatory fish who forage on schools of light-prone minnows.

For the daytime angler, bridges offer access, shelter from sunlight, a picturesque charm that's rooted in the history that they have witnessed, and heftier stringers.

If you would like to give bridge fishing a try, here are some tips on approaches and equipment that can help to maximize your success odds.

When fishing under a river bridge during daylight hours, always cast beyond its shadows upstream, allowing the lure or bait to drift into the shade. This causes no disturbance where fish are most likely to be hiding, and gives a natural look to your presentation.

If you are using live bait, fish them deep along the walls of support structure. Fish are inclined toward vertical structures and deep water.

For this reason among others, the best type of man-made lures that can be used from atop a bridge are those that can be fished vertically, like lead-headed jigs. As a general rule, lures that are good for ice fishing are also effective from bridges, if fishing is permitted from the span itself. Naturally, caution should always be used when fishing from bridges. Easily recognizable clothing is a must because of vehicular traffic.

You may need a few extra inexpensive items on your gear list if you plan

to do some fishing from atop a bridge. Since the chance of losing a catch becomes greater when you're hoisting it through the air, elongated, telescopic nets are a great help when fishing from most bridges. These can be purchased from most mail-order sports shops and at some larger sporting goods stores. You can fashion a homemade contraption that will do the job by securing a net to a long pole.

Keeping fish fresh after you have hoisted them up can also be a problem. A long rope attached to your stringer, or the rope itself, if you can string fish with it, will allow you to keep your catch fresh in the water, even though you're a good distance above it.

If you happen to spot fish from atop a bridge, be sure that you do not allow your shadow to spook them. Several years ago, my wife and I came upon a party of anglers fishing beneath the bridge that spans the Ashokan Reservoir in the Catskill Mountains of New York. The ten or so anglers

had taken eight beautiful rainbow trout, none of which weighed under five pounds! Surprisingly, however, when we descended the incline to take pictures, we found the anglers in a state of disgust. Passersby, who had gathered atop the bridge to witness the action, had scared off countless more feeding lunkers by casting their shadows over the pool where the fish were foraging. Avoiding such carelessness on your part could help to better your take.

If bridge fishing from a boat is your forte, watch for timber drifts that have collected around abutments. These are favorite feeding spots for bass. And ply the shadows. These are attractive hideouts for lunkers.

From border to border, quality fishing bridges abound in the state of Pennsylvania, and, if effectively used can be a great boon to the angler.

Keep an eye open for an attractive one in your travels, and when the opportunity presents itself, give it a try. It may connect you to some topflight fishing.

A youthful angler found this bridge over the Lehigh River near Gouldsboro, a picturesque and productive fishing hole.



Avoid the crowds...try spring panfishing—



Rose Valley Lake, one of the author's favorites, offers Pennsylvania anglers 360 acres of panfishing opportunities.

TAKE FIVE!

by Steve Ulsh

When southern Pennsylvania mountains become tinged with green and occasional wisps of warm breezes commence to blow ever so gently over the land, instead of waiting for the opening of trout season and its accompanying throngs, I start to plan, as I've done with increasing expectancy for the last three or four years, for what I like to call my "Five-Lake Panfishing Junket." Panfishing is an activity to which I must admit that I'm a "johnny-come-lately" but one I've found to be extremely fascinating and enjoyable for me. It's an activity in which my entire family can participate. We can spend more time outdoors enjoying the contents of a

picnic basket and at the same time experience some old-fashioned family togetherness which seems so out of style today.

My interest in panfishing did not come to me out of the blue . . . with some voice in the night telling me to build a worm box "so many by so many cubits" and catch two of every panfish there is; rather, it came from listening to and taking advice from our own field officers, men who certainly know what's going on as far as fishing in their particular area is concerned. On their recommendations, I've picked these five lakes and have followed their instructions as far as what lure to use and when to try

these areas for panfish. The following is a brief description of my spring panfishing efforts.

PINCHOT STATE PARK

Waterways Patrolman Warren "Barney" Singer encouraged me to try this lake for crappies in mid-April and May and I usually make three or four trips there. Pinchot is a three hundred forty-acre lake in York County and in addition to having a large number of panfish, has some nice walleyes, largemouth bass, northern pike and muskies. When fishing Pinchot, I generally look for the coves that have some cover but I

stay away from those areas with soft muddy bottoms. The crappies in Pinchot prefer more rocky or hard-bottomed shallow areas and as the water gets warmer they come in close to shore. The fact that they're near the shoreline eliminates any need for a boat and you can reach them quite well with a pair of hip boots or waders. In some areas, even these aren't necessary. If you have room to make any average cast from shore, you're in business. Patrolman Singer has encouraged me to use streamers, especially those with black and white or orange and green color combinations. Pennsylvania's record crappie, 18 $\frac{3}{4}$ inches, 3 $\frac{1}{4}$ pounds, came out of Pinchot in 1971; however, I've never gotten any near that size. Algae is sometimes a problem in Pinchot but look for areas that are weed-free — these are productive areas.

SPEEDWELL FORGE

This one hundred six-acre impoundment is the site of the Fish Commission's Southeast Regional Headquarters. Stanley Paulakovich, the assistant supervisor has given me many tips on where, when and how to fish this lake. Located within easy driving distances of my home in Harrisburg, Speedwell is just outside Lititz and it's easily reached from Route 501. The shoreline here is fairly open except for a portion of one side that's bordered by woods along a fairly steep bank. A few years ago, some sportsmen directed by Waterways Patrolman Harry Redline felled some trees on this side and placed them in the shallow water. These trees have made excellent crappie spawning areas and fishermen who try these areas with small jugs and minnows can do well. The bluegills are more widespread throughout the lake and I look for areas that have fairly deep water and are free from algae. The water in Speedwell is quite fertile and this sometimes causes extensive aquatic growth which can make fishing difficult. When fishing for bluegills at Speedwell, I use jigs, artificial grubs, small minnows and sometimes small garden worms. On Stan's advice I use these baits suspended from a bobber and vary the length of my line between bobber and bait, lowering it until I begin to catch fish consistently. The Fish Commission has plans to place some submerged brush piles



Walker Lake, more than 300 acres of underutilized panfish opportunity.

around the lake. This should create additional spawning and cover areas for crappies.

MEMORIAL LAKE

Located on Indiantown Gap Military Reservation in Lebanon County, Memorial Lake is about seventeen miles east of Harrisburg via I-81. It's one I use for evening trips when time is at a premium. Of the five lakes I visit this one is the most difficult for me to achieve consistent success, but I've experienced some nice crappie catches here in spring. Former Waterways Patrolman Paul Hornberger was my source of fishing information here and he pointed out two areas that I should try. The first is the relatively deep area near the dam breast. The second is the shoreline along the cove near the Adjutant General's residence. The shoreline bordering the house is posted, naturally, but there are still plenty of open spots to fish. I use small jigs and minnows here. If I'm

using minnows, I use a bobber and vary the length of line from the bobber to the bait. I've fished Memorial mostly in the evening hours and have had my best luck when fishing into a slight breeze. The wave action created by the wind gives the added movement to the bait that crappies seem to like. As I stated earlier, my fishing at Memorial isn't as productive as other areas, but I know there's a good crappie and bluegill population there and if I took more time to study the lake and didn't use it as my "quickie" trip I could probably do better.

WALKER LAKE

Walker Lake, in Snyder County, covers three hundred twenty-nine acres and is one I use for those Saturdays and Sundays in April, May and June when I have some time to travel. It's located near the village of Troxelville off Route 235. Being located in a rural area, it might be hard to find; but, if necessary, you can always ask some of the local residents

for directions. Crappies and bluegills are abundant and there's also excellent northern pike, largemouth bass and some walleye fishing. The best spots for crappies are located along the wooded shoreline directly across the lake from the Fish Commission access area. Here there are a number of submerged trees and stumps that crappies especially like. The upper one-third of Walker has some good weed beds that provide excellent cover for bass and bluegills. Dick Fry, waterways patrolman for Snyder and Union Counties, turned me on to panfishing here. He suggested small white, yellow, or black jigs and poppers. I take along a good variety of both. I fish with poppers if fish are surface feeding; if they aren't hitting the poppers I switch to jigs.

ROSE VALLEY LAKE

The most distant from my home, but one I consider the prettiest, is Rose Valley Lake in Lycoming County. Paul Swanson, Northcentral Regional Supervisor, started my fishing trips here. In fact, he literally put my feet in the water a few years ago when he took me to Rose Valley for bluegills. We fished with small white jigs, using a bobber to suspend the lures off the bottom and fished from the east shore facing into a brisk wind. The wave action provided that needed movement to our bait and in two hours we each had our limit of fifty hand-sized bluegills. Just about every foot of Rose Valley's shoreline is good for bluegills. However, the access areas get heavy pressure so it's best to walk about one hundred yards or more either way from the access sites. Some particularly good places are the coves that abound with stumps and weeds barely visible above the water surface. Look for the open pockets of water and fish these areas. One tip Paul gave me that I use in any lake is to vary my fishing depth according to water temperature. In spring, as water temperatures begin to rise, bluegills will seek shallow water. However, one or two cold days or nights will drive them out from the shallower shoreline areas. If you don't find fish in shallow water try casting a little farther from shore into deeper water.

Panfish in all of these lakes aren't



If action is slow, well, you just take it easy like these youngsters!

tackle busters although Pennsylvania's record crappie (18¾ inches) did come from Pinchot Lake in 1971. All of our field officers speak as one in agreeing that these lakes could certainly stand increased fishing pressure. The more panfish creel the better, for this would decrease competition for food and space, resulting in larger fish. Panfishing's a great family sport requiring a minimum investment in tackle and supplies. My two sons accompany me when they can and neither has trouble catching fish using the suggestions I've obtained from our field officers. You can do as I've done and try some panfishing junket. If you'd like some firsthand information and tips on how to enjoy fishing for, preparing and cooking panfish, why not attend one of the panfishing clinics sponsored by the Fish Commission? Our officers and their deputies are there to help you get started or improve your panfishing. You might find your own familiar lakes on which to "take five."

The following is a thumbnail sketch on "my" five lakes:

PINCHOT LAKE, York County. 340 acres, launching areas, electric mo-

tors only. Boat rental, overnight mooring, camping, picnicking, sanitary facilities. Contact Southcentral Regional Office, R. D. #3, Box 109, Mifflintown, Pa., 17059. Phone — 717-436-2117.

SPEEDWELL FORGE LAKE, Lancaster County. 106 acres, electric motors only, launching areas, overnight mooring, sanitary facilities. Contact Southeast Regional Office, Box 6, Elm, Pa., 17521. Phone — 717-626-0228.

MEMORIAL LAKE, Lebanon County. 80 acres, electric motors, launching areas, overnight mooring, picnicking, sanitary facilities. Contact Southeast Regional Office, Box 6, Elm, Pa., 17521. Phone — 717-626-0228.

WALKER LAKE, Snyder County. 329 acres, electric motors, launching area, overnight mooring, sanitary facilities. Contact Northcentral Regional Office, Box 688, Lock Haven, Pa., 17745. Phone — 717-748-5396.

ROSE VALLEY LAKE, Lycoming County. 360 acres, electric motors, launching areas, overnight mooring. Contact Northcentral Regional Office, Box 688, Lock Haven, Pa., 17745. Phone — 717-748-5396.



Sampling Wayne County's Trout Waters

by Gerald Almy

Stockies are gullible, naive critters. They want something big, flashy, or 'meaty' looking, like the stuff they've been fed in the hatchery."

With that bit of folk wisdom in mind, I rigged up a 4½-foot ultralight spinning rod, grabbed a handful of lures, and began working up Wayne County's picturesque Equinunk Creek on a frigid, overcast April morning.

The spinning gear felt odd in my hands after years of using nothing but a fly rod for trout fishing. But weren't these freshly stocked trout, only recently weaned from their hand-fed existence? "They probably haven't even learned what a mayfly is yet!"

So I reasoned, in spite of misgivings, as I worked the seductive looking pools and riffles between the second and third bridges up from the Delaware River. By the time I reached the third bridge, however, only one small brown had fallen for a small yellow Flatfish lure.

Mildly disappointed, I began the walk back to my pickup camper. But before I reached the vehicle, a revealing sight greeted me. In the second pool from the road, a sparse batch of *Baetis* mayflies (Blue-Winged Olives) was coming off in the damp drizzly weather these flies thrive in. More interesting still, some feisty trout were greedily snatching the fluttering mayflies from the surface — trout which only minutes before had ignored my spinning lures.

Scurrying back to my truck, I grabbed the already rigged fly rod, knotted on a #18 olive dun, and raced back to the dimpled pool. To be brief, in the next fifteen minutes, no less than nine scrappy brown trout smashed into the mayfly imitation, fought belligerently against the split cane rod, and were released into their home to mull over their rude experience. Gullible stockies?



This brilliantly marked native brook trout came from Dyberry Creek.

With this auspicious start, I began several days of trout fishing this past spring in a region which receives very little publicity, but offers some of the best coldwater fishing in the East. Wayne County is rich in fishing opportunities for both the cold and warmwater species. The quantity and quality of angling found in this northeastern county are exceptional. It would take weeks to explore the coldwater fisheries alone in Wayne County but with the help of Wa-

terways Patrolman Michael Badner I've assembled some notes on a few of the top trout spots in this county. There are a total of 24 recognized trout waters in Wayne, not to mention a sprinkling of small, hike-in native trout brooks.

EQUINUNK CREEK: Eleven miles of good trout water from the Delaware River upstream. Route 191 crosses the stream near the town of Equinunk. The Fish Commission stocks some fine trout in this stream.



Many sections of the Dyberry Creek offer the angler extreme solitude.

A return visit in June to the pool mentioned above yielded two brown trout in the 14-inch class, and one angler I met fished another pool with "half a dozen trout 16- to 18-inches-long in it." Some palominos were also present. In the fall, waterways patrolmen have reported sighting 18-inch browns spawning near the mouth of the Delaware.

DELAWARE RIVER: Though not designated as "Approved Trout Water" in the Summary of Fishing Regulations and Laws, and hence not stocked by the state, the Delaware

River nevertheless offers quality trout fishing for both rainbows and browns. The section containing trout runs from Hancock, N.Y., to Callicoon, N.Y. Both native and stocked trout enter the river from feeder creeks such as Equinunk, Sherman, and Hollister.

. Rainbows are the predominant species, though there are some huge browns in the river as well. One angler told me of having his line cleaned out by one of these torpedo-like bruisers. Not an extraordinary event, except when you consider that he was using

baitcasting gear and 20-pound line and still couldn't stop the brown! The bait was a live nightcrawler.

The Delaware offers excellent opportunities for float fishing in a canoe or johnboat. **Warning—some of the rapids can be tricky . . . be sure you talk to someone familiar with the stretch you plan to float beforehand.** The best dry fly fishing occurs in the spring and fall and during the evenings in the summer.

BUTTERNUT CREEK: This stream offers three miles of quality trout fishing. Patrolman Badner notes that



A view of Dyberry Creek — one mile of "Fly-Fishing-Only" water.

"riffles, pools, and natural reproduction" characterize this trout stream. There are 2.5 miles of FLY-FISHING-ONLY water, from L.R. 63004 downstream to the mouth. Rt. 191 crosses the fly-only water south of Hamlin.

WALLENPAUPACK CREEK: This stream, reached via Rts. 507 and 191, north of Newfoundland, offers trout in both its West Branch and main stem. There is natural reproduction in Wallenpaupack Creek, and a good mixture of riffles and pools for trout seekers.

DYBERRY CREEK: All four branches of this creek situated north of Honesdale offer trout fishing. There is one mile of Fly-Fishing-Only water on the main branch reached west of Rt. 191, just below the town of Dyberry.

I visited the fly-only stretch on the Dyberry late in April, and again in June, and this has to rank as one of the prettiest trout streams anywhere. Classic pools and riffles, majestic bordering trees and an absence of heavy fishing pressure combine to make Dyberry a joy to visit.

In late April, two flies stood out as

especially productive. While the water was high, following a heavy rain, a #6 Black Marabou streamer drew abundant strikes. After the water cleared somewhat overnight, a #18 Blue-Winged Olive dry fly brought slashing strikes from hungry browns. In June, March Browns were popping out sporadically, and a #10 thorax-tied imitation of this large dun drew steady action, including one beautiful native brook trout.

UPPER WOODS POND: A remote, highly productive cold water fishery. Gobblers bellowing their hearts out and ruffed grouse drumming in the distance are common musical accompaniments to a day's fishing on Upper Woods Pond. This cold, deep lake offers standout fishing for rainbow trout and kokanee salmon. Chumming with corn and fishing with red worms is the favored method of taking the kokanees, though both the salmon and rainbows often come up to the top where they are accessible to both trolled and cast flies. The Black Gnat is the best bet for anglers who prefer to troll.

In addition to the rainbows and kokanees, the 80-acre "pond" offers browns, brookies and some lake trout. Fishing with live minnows through the ice in winter usually produces some extraordinary catches, including browns up to 28-inches and handsome lake trout.

Other especially good trout waters recommended by Waterways Patrolman Badner include 48-acre LAKE LORRAINE, located east of Orson off Route 370, and 121-acre DUCK HARBOR POND, found off Rt. 191 near the town of Lookout.

HOLLISTER and SHERMAN CREEKS are also worthwhile waters for the stream trout angler. Sherman Creek feeds the Delaware, and is reached via Rt. 370. Hollister is another Delaware tributary, situated off of Rt. 191, near Lookout. This stream offers 4½ miles of trout water.

Many other productive trout streams and lakes in Wayne County await exploration by adventurous anglers, but this summary should give interested fishermen a concrete starting point. Ample numbers of trout, uncrowded fishing conditions, and stunning Pocono Mountain scenery are among the rewards that lie in store for Wayne County fishermen.

Leaky Boots

(continued from page 3.)

develop a plan which will produce better trout angling and give full consideration to the contribution of both wild and hatchery fish.

We have a surprisingly large number of streams which support naturally reproducing, self-sustaining populations of trout. The contribution of wild trout to the total fishery in Pennsylvania is, as you indicate, much greater than most anglers appreciate. While we do have intense fishing pressure in many areas, one can't safely generalize that *most* streams have more fishing pressure than natural reproduction and carrying capacity can balance. The results of our surveys show that some heavily fished streams do hold impressive populations of trout. These results are somewhat confused by the fact that these streams are stocked and hatchery trout may act as a "buffer" against excessive catch of wild fish. Also, we have no firm evidence of what these populations might be if they weren't fished. There is no doubt that a stream can be overfished and that some restriction of catch beyond that provided by normal statewide regulations might be necessary on selected wild trout populations; however, never underestimate the ability of some of our wild brown trout populations to persist in the face of angling and to continue to provide good fishing.

Introduction of hatchery trout on top of a wild population continues to be a controversial issue. Stocking is one very important tool for the creation or maintenance of a recreational fishery. No matter what the findings of our statewide survey, there will be instances where hatchery trout are stocked into a pretty good population of wild fish. Such stockings will be the result of consideration and weighing of all factors involved — a total perspective rather than a purely biological or purely social perspective. I am not an advocate of indiscriminately stocking hatchery fish into good populations of wild trout; however, there are clearly situations where to do otherwise would be to deprive a large number of people of a desirable recreational experience within a reasonable distance of their house.

Wild trout should be managed as a separate entity from hatchery trout. Our wild trout populations are an extremely important resource. No matter their apparent similarities, a hatchery trout can no more replace a wild trout than a Rhode Island Red can replace a ruffed grouse — they simply aren't the same beast. It is the hope of all of us in the Commission's fisheries program that implementation of recommendations result-

ing from our comprehensive statewide survey will provide an approach to trout management that will give full recognition to wild trout fisheries and will make optimum use of both wild trout and hatchery trout. This obviously means shifting some stockings to waters where wild trout are not a factor and providing some special management to assure that selected wild trout populations will be managed for "quality" rather than "quantity." At this time I am not in a position to offer specifics or details because, quite frankly, we don't have them. We aren't that far into our planning process. We will, I feel sure, be considering many of the points you raise. The management of wild trout is not going to be easily accomplished — the social implications are evident. We will be counting on devoted anglers such as you to support efforts to establish wild trout management as an important component of the Pennsylvania Fish Commission's fisheries management plan.

I cannot leave the subject of wild trout/hatchery trout without some comment on your statement that a large block of evidence is building that indiscriminate stocking of hatchery trout has a long-term effect that is generally unfavorable to trout. It has become quite fashionable in certain circles to support the sweeping generalization that hatchery trout "hurt" wild trout populations. This started with a study in Montana and has been leaped upon by quality angling enthusiasts and some fish behaviorists as gospel. Well, if this is gospel, let me caution you to beware of false prophets. I have a pretty keen interest in wild trout, special regulations, stocking versus no stocking — the whole spectrum of things we do to create better trout fishing. It is my considered opinion that stocking hatchery trout into a wild trout population may directly or indirectly produce one of three results:

1. No discernible change in wild population.
2. The wild population benefits due perhaps to a "buffer" effect against exploitation.
3. The wild population decreases or changes in composition due to who knows what.

Confusing, isn't it? There are so many variables associated with wild trout populations that I hesitate to make all-encompassing statements about the effect of hatchery trout on wild trout.

Wild trout are normally quite capable, given the right physical environment and some protection from overharvest, of sustaining their kind through natural reproduction. The protection you suggest, i.e., special regulations such as no-kill or fly fishing, may indeed be part of an overall program to manage selected populations. This is certainly one of the al-

ternatives our staff will evaluate. We are aware of no situation in our waters where the Vibert box would produce any beneficial effects. In terms of management of wild trout, it appears the Vibert box has no role in Pennsylvania. (A pair of honest-to-goodness wild trout spawning in a favorable environment will do more for wild trout angling than any plastic box full of hatchery trout eggs.) In certain situations where all the life requirements of trout are met except for suitable spawning and/or nursery habitat, we have found fingerling stockings to be successful. We intend to continue to utilize fingerlings in those somewhat special cases where conditions permit establishment of a trout population through fingerling stocking.

I agree with your observation that trout anglers tend to vary according to the intensity of their commitment to trout fishing. Whether there are three categories as you suggest or whether there are more is not important. What is important is that programs offered by the Pennsylvania Fish Commission are diversified enough to meet all the expectations of these various categories of anglers. We hope that the results of our work in surveying and inventorying the trout resource in Pennsylvania will provide us with the facts upon which we can build and expand an approach to trout management which recognizes both wild trout and hatchery trout anglers, bait fishermen and fly fishing purists, and the serious devotee of trout as well as the casual, general recreational angler who only occasionally goes for trout. We must provide a diverse angling experience without compromising quality. I am optimistic and confident that the Pennsylvania Fish Commission will continue to be a leader in providing a varied fishery while recognizing that conservation and preservation of quality habitats are of paramount importance.

I appreciated having your "two cents" worth (it was worth a good bit more than that). I feel that the Pennsylvania Fish Commission's programs will always provide recognition for the intangibles, the quality of the experience, as long as we have a constituency of anglers such as yourself who appreciate that trout fishing as a total experience is often worth far more than the accumulation of dead flesh in a creel.

Sincerely,
Delano R. Graff, Chief
Division of Fisheries

COLLECTOR —

Being an angler, I decided to construct some type of related display for my home. The idea of arranging the old fishing badges in the shape of a keystone became

the project. After several months of searching I turn to your readers for help. I can't find licenses for the years 1923, 1924 and 1925. If anyone has a license from one of these years and is willing to part with it, please contact me. I also need a trophy bass for in the center but I'll continue looking for that myself in the Pennsylvania waterways.

GEORGE H. CONRAD
138 N. Catherine Street
Middletown, Pa. 17057

We wish you well, George. Perhaps one of our readers has that which you seek. Anyone wishing to do so is advised to contact Mr. Conrad at the address given. Ed.

RECOGNITION —

Please note that I have recently relocated from Pennsylvania to Michigan. Since I enjoy reading the articles in the Angler, particularly Leaky Boots and the comments by the waterways patrolmen, I should hate to lose such valuable information. My fishing friends here in Michigan think the Angler is the best thing since sliced bread.

I don't know how your waterways patrolmen are recognized for excellence

or what the criteria may be, but during my last several years in the Pittsburgh area I came to recognize one of your deputy waterways patrolman as an ambassador of the waterways and a person who should be lauded as a dedicated employee and an asset to your Fish Commission. His name is Frank Marzano. Frank works the Oakmont and New Kensington pools on the Allegheny River.

STEVEN J. CHOBY
Port Huron, Michigan

You've done it, Steve, and we're certain that Frank appreciates your comments. So they've got sliced bread up there now, do they? Ed.

WANTS WALLEYES —

After reading your November issue about the walleye pike, I would like to further my research about this fish. I would like to know how to determine how to catch the fish, what part of the lake they're in and what type of bait to use. If you have any information that you think would be beneficial to me I would be more than grateful to you for sharing it.

ANDY HOUP
Greenville

Looking over that November walleye article again, Andy, it would seem that author Williamson covered the subject rather thoroughly. But, for what it's worth, if an angler had to choose only *one* bait for walleyes (by the way, they're not "pike"), it would have to be a minnow — although many a walleye has fallen for a nightcrawler bounced along the bottom.

"What part of the lake they're in . . ." will vary from lake to lake and from season to season; but, that's what fishing is all about — *finding them!* Ed.

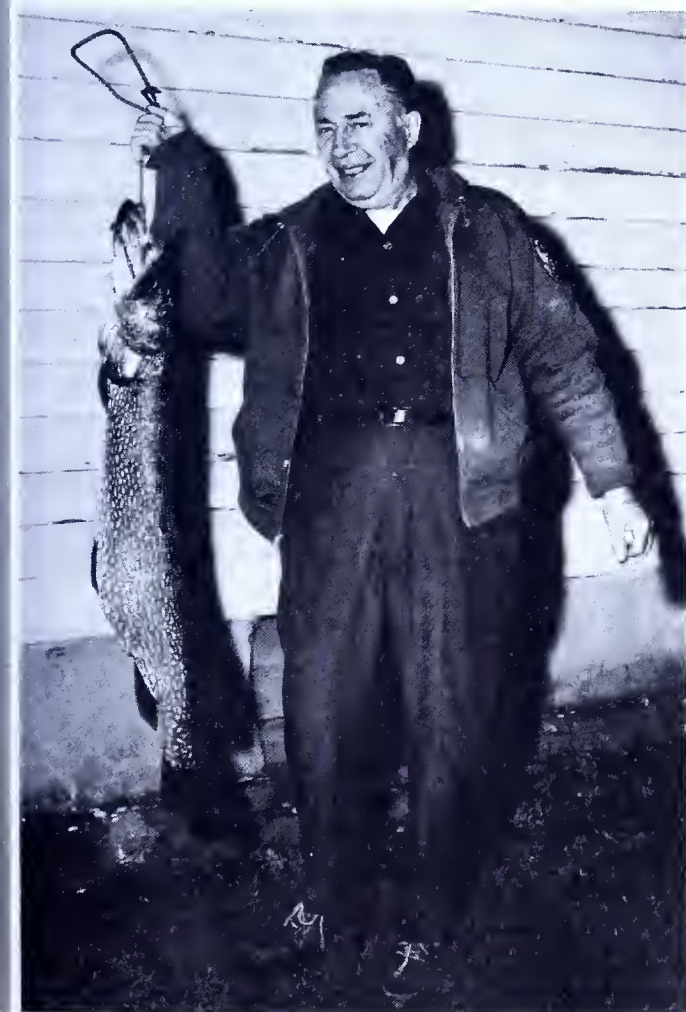
WHO HAS THEM?

A few fishermen are catching 3-5 pound bass from our lake. They fish the lily pads and weeds with a "Pollywog" lure. Black head and a red/orange rubber skirt.

These lures are apparently unavailable on the market now. Can you tell me who made them — or a possible source to purchase the Pollywog?

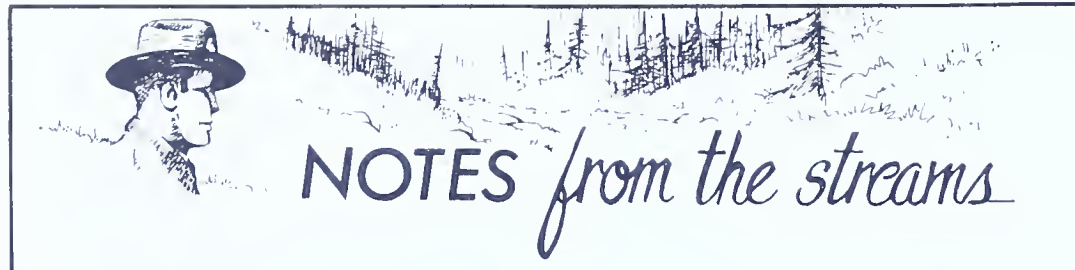
G. E. DETTY
P. O. Box 1
525 General Muhlenberg Road
King of Prussia, Pa. 19406

How about it, readers, can anyone help "G.E."? Ed.



From all corners of the state we're seeing some great catches of northern pike. George Feik's 42-incher, left, from Wayne County was just under 17 pounds. Charles Simmons, above, caught his 39- $\frac{1}{2}$ -incher in York County's Muddy Creek. Pan Cancilla, below, caught his 35-incher at Kinzua—"with a little help from a friend." Linda Zimmerman netted it.





"NOT GUILTY!"

While on a recent patrol on Harveys Creek I observed a man and a woman fishing. The man was wearing the usual fishing attire and displaying a fishing license but the woman was wearing an everyday house dress and was not displaying any license. After parking and watching for about twenty minutes, or so, I got out of my car and walked to where the woman was still fishing and requested to see her license. She explained to me that she had left the license at her home. I asked her if the man fishing about six hundred feet downstream was her husband and she replied, "Yes."

When the woman and I had walked to the man, I requested to see his license. During our conversation he admitted being the woman's husband and also stated that she had left her license at home. I had a feeling that this woman never had a fishing license in the first place and I informed her of my feelings. Again, she said that she had one at her home which was about two miles away from where we were.

I then told the two of these people that I would follow them to their home to see the license. When I was walking to my car the woman called to me to "Wait a minute..." she wanted to speak with me. When she caught up with me she said, "I have never lied in my life, and I do not intend to start now, I have never had a fishing license." Then, the woman ended with, "I have not done anything wrong, this is not my fault." Is Watergate catching on in sports also?

Claude Neifert
Waterways Patrolman
N/Luzerne County

ALERT!

Recently, an unidentified young lad witnessed a tank truck leaving a secluded area adjacent to Perkiomen Creek. He then discovered a large amount of human sewage at the spot and found that the liquid had gone into the stream. This lad then immediately reported what he had seen to the State Police who informed me. Together, we apprehended and prosecuted the violator—within two hours of the violation! None of this could have been done without the quick action of the young man

reporting it. Whoever or wherever you are, young fellow, I give you my personal thanks. We need more folks like you to take quick action when they see a pollution. When you see a pollution, don't complain that nothing is being done. Report it as quickly as possible to your waterways patrolman. Too often pollutions go unreported until it's too late to trace it to the violator.

Guy A. Bowersox
Waterways Patrolman
Montgomery County

ILLEGAL FOUL-HOOKING OF BEAVER —

One evening, my two younger sons and their friends went fishing in a nearby stream after dark. During the evening, my son's friend's lure accidentally became imbedded in my youngest son's leg which resulted in medical treatment to have the hook removed. I told the young fisherman that he had illegally foul-hooked a *Beaver* which, of course, was out of season at that time, with the penalty being payment of one doctor bill. Of course, we all know who took care of the doctor bill. The object of the story is to relate the message to fishermen and especially young fishermen to be extra cautious with hooks and lures as they can seriously injure themselves or a friend, possibly with a loss of an eye or permanent disfigurement. Each year we have many fishermen, usually younger and inexperienced, with hooks imbedded in hands, face or legs.

Warren L. Beaver
Waterways Patrolman
Crawford County

SINCERE WORKERS—

Every Monday for the last ten weeks the Environmental Education Class from Bishop Hoban High School, with help from the local 4-H group and the Y.C.C., has carried tons of rocks and logs for use in building stream improvement devices. As the year progresses, they will also pick up tons of litter left by thoughtless campers, fisherman, and sightseers. They will help float stock fish and additionally, assist the Pennsylvania Game Com-

mission with a myriad of projects. I cannot help but wonder what could be accomplished if everybody thought like these twenty five young people.

Robert Lynn Steiner
Waterways Patrolman
S/Luzerne County

SELECTIVE SNAPPER!

Ray Piccolin, a good friend of mine, was panfishing at Tamarack Lake last spring. He had strung seven perch and five bluegills before they stopped biting. After an hour of no action he decided to call it quits. Imagine his surprise when he pulled up his stringer and it had five bluegills and seven perch *heads*. A snapping turtle had carefully gone down the stringer eating perch and skipping the bluegills. I have always heard that perch were the best tasting of the panfish... it must be true!

Don Kingery
Deputy Waterways Patrolman
Allegheny County

TURNABOUT —

At the Annual Canoe Races, sponsored by the Juniata County Development Commission on the Juniata River, the first place winners were John Kabaci and Bill Subers of Levittown. Besides the first place trophy each of these young lads were presented with a \$25.00 savings bond.

They kept the trophies, but in a most noble gesture, immediately donated the bonds to the Mifflin and Mifflintown Fire Departments.

A tip of the Fish Commission hat to these two fine youngsters.

Richard Owens
Regional Supervisor
Southcentral Region

TRIPLE WINNER—

To many people, fall is the most beautiful time of the year. Especially so for the outdoorsmen that look forward to that time of the year. I talked with a fellow last fall that can hardly wait until next year. He was archery hunting; killed a buck with his bow, shot a grouse with his gun and caught a 21-inch brown trout in Penns Creek with his rod... all in one day. His only complaint was that I was the only guy he talked to that day and felt that nobody would believe him! Last I saw of him he was "floating" about twenty feet off the ground.

Paul Antolosky
Waterways Patrolman
Centre County

"... OR ELSE!"

I received a number of complaints requesting road repair on the road leading into the Meadow Grounds Lake. One fisherman insisted that I, *with hand tools*, repair the road just for him or he would not purchase a fishing license!

Bryce Carnell
Waterways Patrolman
Franklin-Fulton Counties

CHECK TEMPERATURE FIRST!

Last year brought many calls concerning trout dying in private ponds. Undoubtedly this was the result of long periods of very hot weather which slowly brought the temperature of the ponds up to an intolerable point for the trout. This is unfortunate when you consider that many people pay good money for the trout and sometimes supplemental feed for them. But it does point out an important fact when one considers stocking a pond with trout: many ponds just cannot handle *coldwater* fish. Only a few days of water temperatures in the high seventies can completely kill off all of the fish. If you have a pond and are thinking of putting trout into it make sure it is a coldwater pond, preferably spring-fed, before you go to the trouble of stocking it with trout. If it already has a good population of bass and bluegills you may be wasting good money by putting trout in because these two species of fish like warmer water. If they are thriving, chances are the pond will get too warm in the summer for the trout.

Larry R. Baker
Waterways Patrolman
Mifflin/Juniata Counties

MANY ON THE "MON" —

Fishermen and fisherwomen have been utilizing the few warm days we had been having last fall. Either they had been reading Executive Director Abele's editorial for the month of October or they just wanted to get out in the nice fall weather. I checked quite a few of anglers on the Monongahela River and saw a good number of largemouth bass caught. The areas around California, Pennsylvania, and up as far as Ten Mile Creek have been very good. The most productive bait has been minnows. It sure was great to see the people on the Monongahela River getting out and taking advantage of the good fishing and beautiful fall days. I don't want to forget those channel cats... they have also been in great abundance.

Jerry Greiner
Pollution Patrol
E/Allegheny County

ICE FISHING HOTSPOT

One of the newest hotspots for ice fishing is on a forty-year-old lake, Pymatuning Lake. The past two winters, walleye fishing through the ice has increased by leaps and bounds as more fishermen are learning to properly use solonars and jigging rapalas through the ice. One of the main areas fished is approximately two miles north of the dam near the #1 swim beach — early in the season as soon as the ice is safe, usually in late December and early January. The legal limit through the ice on Pymatuning Lake is eight a day and during the first four or five weeks of the season many fishermen limit out each day, *early in the day*. The prime times seem to be either from daylight to about 9:00 a.m. or 10:00 a.m., or from 3:00 p.m. to dark. Usually, very few are taken after dark.

Warren L. Beaver
Waterways Patrolman
W/Crawford County

"THIS OTHER THING..."

A very excited teenage boy came to our home one crisp cold February evening to report the results of ice fishing at Hereford Manor Lake. The lad, along with his mother and father, had caught a rock bass, a nice trout, and "this other thing" which he wasn't sure of because he had never seen a "fish with legs"! Before I arrived, Nancy had already made a positive identification of "it" as a mud puppy or more common name of "waterdog!"

Don Parrish
Waterways Patrolman
Beaver County

HARD WORKERS!

The St. Marys Conservation Club undertook two days of stream improvement on Medix Run last year. The casualties were as follows: one badly bruised little finger, one lacerated hand (13 stitches), one slightly bruised toe, one bruised finger joint and one bruised ankle. Each and every one of the victims wanted to continue working and three did. Two had to have medical attention and one of these cried because *she* could not return to the work site. All the victims were females. All of the 130 students worked hard as they built a jack dam and repaired about 6 other devices. I thank these boys and girls and hope to see them this year. Maybe we will get lucky and everyone will survive unhurt. I am sure the fish on Medix thank them too!

Stanley Hastings
Waterways Patrolman
Cameron County

THAT TIME AGAIN —

It's trout stocking time again, the trucks are rolling and regardless of weather conditions, we are going to be out there putting in a fresh supply of fish for Pennsylvania anglers. I hope everything goes as smoothly as it did last year.

We've stocked a number of heavy brood fish again and were pleased to hear that most of them stocked last year were caught by local anglers. I hope they do as well this year, as the fish look better than ever.

We are very lucky here in Lancaster County in that we have many miles of trout water and many fine men interested in seeing that the fish are equitably distributed in them. Probably 75% of all fish stocked here are float-stocked, which means better fishing for *all* — because of the work of a few.

Harry H. Redline
Waterways Patrolman
S/Lancaster County

COMMON GROUND —

While sitting at Harveys Lake access area on December 17, 1977 awaiting the arrival of the Fish Commission's stocking truck, I observed 3 "old-timers" (probably complete strangers to each other) showing each other their favorite lures, a young man taking pictures of the scenery, a man fixing his taillight on his auto, a father showing his young children something in the lake and a few more persons standing around talking with each other.

I couldn't help wondering to myself what this world would be like if we didn't have moments like this just to relax and enjoy the beauty of nature and the wonders of man. Everyone needs *somewhere* to just plain relax. Why not do it on the lakes and streams of Pennsylvania? Fishing is fun, rewarding and healthful. So, get out, relax and enjoy yourself... go fishing!

George Dennis
Deputy Waterways Patrolman
N/Luzerne County

COHO ARRIVE HOME

Early in the fall of 1977, before the salmon trap was put in Trout Run, several early returning coho from Lake Erie made their way upstream to the Fairview Hatchery, navigated the outlet pipe and jumped into the last raceway, demonstrating some real pinpoint homing accuracy.

Neil W. Shea
Superintendent
Fairview Hatchery

FLY TYING

The Speckled Midge



by Chauncy K. Lively
photos by the author

If one were to be terribly fussy about it, the word “midge” should be restricted to suggest the little aquatic Diptera (and some are not all that small) of the family Chironomidae, as well as those of several subfamilies. But fly fishermen tend to expand the meaning to include the broad spectrum of true midges, gnats and diverse minutiae, both aquatic and terrestrial, ever-present in the water’s surface film. And, it’s not a bad rationale at all, although entomologists tend to become upset about such plebeian inaccuracies. Personally, I like the anglers’ designation because the word is descriptive of the size. Besides, my fly boxes are crowded enough already and if I had to categorize the little flies into separate designations (and compartments) my vest would have to sprout a few more pockets.

There are times when trout become selective to specific midges, particularly during evening hatches, but the

midge-feeders of midday seem to be more catholic in their tastes and willing to sample the sundry available to them at that time.

I can never have too many midge patterns. Spents, fore-and-afts, skaters, straddle-legs — in a range of sizes and colors they all serve a purpose. The incessant, midge-feeding trout is one of angling’s finest challenges and if one stays with an individual fish until the war of nerves is won (or lost), the chances are the angler has gone through a variety of patterns, particularly if he failed to hook the trout on one of the first few casts. After the trout is raised and missed the law of diminishing returns sets in and the effectiveness of a given pattern declines rapidly. Then the angler must choose between (1) resting the trout, (2) moving on to find another midge-feeder, or (3) changing to a new pattern. I prefer the latter choice because I enjoy nothing more than working over a difficult trout until I

either catch him or put him down. Of course, failures often balance out the successes, and from the standpoint of tallying sheer numbers of trout caught I would be better advised to seek out fresh, unpestered fish. But if I’m fortunate enough to be successful, the satisfaction is far greater than in catching several random fish and the additional time spent is worthwhile.

The Speckled Midge doesn’t represent a specific insect but it has often worked wonders as a backup pattern, after a more conventional midge was missed or refused. The form and light pattern offer a variation from the norm and sometimes a slight contrast gives just the edge required. Palmered dry flies are sometimes called “buzz” patterns and it is speculated that they represent insects with their wings vibrating. The Speckled Midge is hackled open-palmer, with the hackles tied in at the head position, dull sides facing forward, and wound individually back to the bend in spaced turns. This method utilizes the convex profile of the hackles to position the barbules in the approximate posture of the insects’ legs on the water, flared forward in front and rearward in back. This also provides the fly with maximum floating stability.

Olive tying thread serves a two-fold purpose: to bind and tie off the hackles and to provide a body for the pattern. A whip finish at the rear of the fly, behind the hackle, may sound a bit intimidating at first but if you can make a whip finish by hand at the head of a fly you’ll have no trouble. However, a whip-finishing tool cannot be used here without crushing the hackle and if you are dependent on the tool for this function you may substitute several half-hitches.

The Speckled Midge derives its name from the flecked appearance of the grizzle-brown hackle mix — the reliable Adams hackle combination — and its peppery image makes it easy to see in poor light. Useful sizes are #20 to #24. Don’t be discouraged if you haven’t hackle of proper size for the smaller hooks. Simply tie the fly slightly oversized and trim the hackle evenly until the barbs are no longer than 1½ to 2 times the hook’s gap. Trimmed flies are perhaps not as aesthetically pleasing but they don’t suffer one whit in effectiveness, I can assure you.

Dressing the Speckled Midge:

Left — Clamp a dry fly hook (#20 to #24) in vise and tie in olive tying thread at bend, opposite barb. Wind thread forward to eye in close turns, then back from eye about four turns. Half-hitch or allow thread to hang under weight.

Right — Select one each brown and grizzly hackles with barbules $1\frac{1}{2}$ to 2 times as long as the hook's gap. (See text for alternative.) Remove the webby lower barbules and place hackles together. Tie in perpendicular to shank, with glossy sides facing bend. After securing with figure-8 turns, bend stems back along shank and bind. Trim excess stems.



Left — Wind thread in close turns back to bend to form body. Half-hitch.

Right — Grip brown hackle's tip in hackle pliers, make a full turn behind grizzly hackle and wind in spaced turns back to bend. Tie off.



Left — Then wind the grizzly hackle, following the path of the brown hackle, and tie off at bend. Trim waste hackle tips.

Right — Make a manual whip-finish at bend behind hackle and cut off thread. Apply a drop of head lacquer to finish windings. OPPOSITE PAGE — The completed Speckled Midge.



THE ANGLER'S NOTEBOOK

by Richard F. Williamson

FISH FACT: "Bachelor," "Lamp-lighter," "Banklick," "Gold ring." Recognize any of these fish? Fact is, they are only a few of the local names applied to *walleyes*.

Travel slowly along a trout stream. Then you will be able to study the water and make proper approaches to likely spots. Also, slow travel reduces the chance of heavy tramping that will send vibrations off the shores into the water and put the fish on the alert.

Good fish often turn up in unlikely places. A big trout may cruise a shallow flat, a good bass explore a riffle, or a big pickerel lie in ambush in a spot far from weeds. It pays to fish every bit of water that could possibly interest a feeding fish.

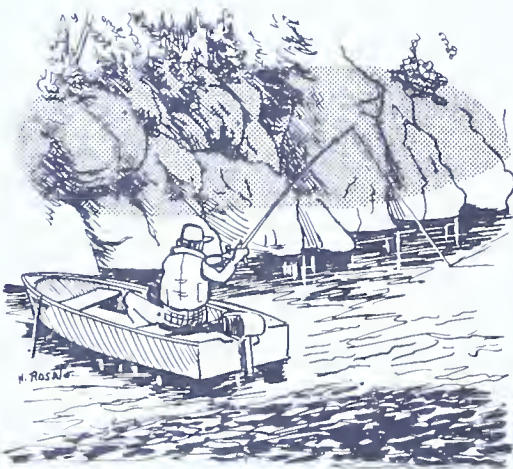
If the beginner at fly fishing will try to snatch the fly away so quickly that a rising trout cannot get it, he will do better. In other words, the strike should be made the second the trout darts at the fly. Usually, a quick twist of the wrist will hook the fish. Don't be afraid of striking too quickly. It is virtually impossible to take a fly away from a trout that really wants it.

There is little danger of losing a trout that takes bait rolling downstream in the current. A bite will be revealed by the sudden stopping of the line drift or a straightening of its curves. But even if these signs should be missed, the trout probably will take the bait deep and hook itself.

Hold the rod vertically and behind you in netting a fish. The tension and spring of the rod will hold the fish in position and at the same time prevent the fish from breaking the leader with a sudden surge for freedom.



A shoreline with rock formations descending steeply into the water is a good fishing spot. In most cases the steep rocks extend on down into the water, and fish roam along the sides looking for food. The best way to fish such a spot is to anchor and to cast lures to right or left, retrieving them over the rocks at various depths.



Don't buy bushy wet or dry flies. Choose lightly dressed flies, which drop on or into the water with less disturbance and which are closer imitations of natural aquatic insects.

Mr. Modern Angler likes to fish a stream where he can park his car along a paved road and stroll easily to the water. That's why streams are so crowded. Back off the main streams are little brooks that get very light fishing pressure because they are difficult to reach. These small streams offer fine angling. Many of them contain beautiful, although not usually big, native brook trout.

Fish in shallow water are wary to the extreme. A quiet approach and a fairly long and delicate cast are essential.

Use wet flies in fishing a curving riffle at the point where it straightens out into a pool, cutting back under the bank at its downward turn. Place the fly in the lower end of the riffle and let the current carry it back into the undercut area where the water is slower and deeper and the fish like to feed.

Running a hook through the collar of the most lively nightcrawler will kill it. Instead, insert the hook in the head just in front of the collar. The crawler will live and will be able to make seductive wriggly motions in the water.

You court disaster if you wear hip boots while fishing from a boat. Even a good swimmer will have trouble if boots encase his legs.

Most really big trout are caught by fishermen who have seen them and fish for them every time they can, finally catching the fish when it is hungry and off guard.

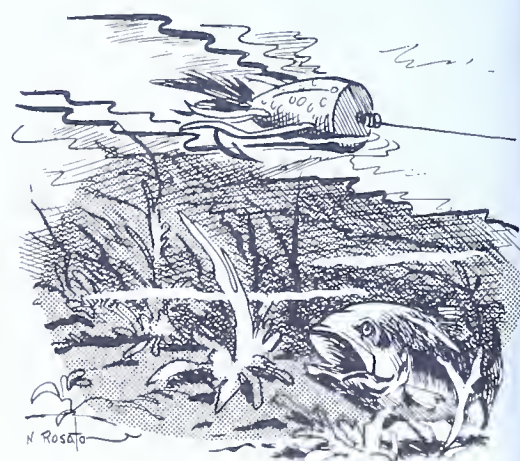
Simple fishing facts often overlooked: fish are in the shallows in the spring, move into deeper water in the summer, and return to shallower water in the autumn. This is how they live in water of comfortable temperature.

A knot in a nylon leader means trouble. It weakens the mono and may break it. Don't try to pick the knot out. Put on a new leader or cut above the knot and attach a new section or sections to the old leader.

Swallows gliding and dipping over the water of a pool can tell an angler something. They are feeding on insects in the air and they frequently dip down and take a bug off the surface. Trout can begin feeding at about the same time.

Bucktails and streamers are good lures because all trout are meat eaters by preference, and these lures represent minnows and the small fry of other species of fish. The larger a trout becomes, the more it feeds on minnows.

A bassbug, no matter what the material of which it is made, must have plenty of space between the hook point and the body of the bug. The mouth of a bass is tough, and the hook must penetrate deeply to hold, then lock securely in the jaw of the fish.



LYCOMING CREEK ANGLERS' CLUB —

A new addition to the Cooperative Nursery program

by Richard F. Williamson

Four hundred trout fishermen in Central Pennsylvania have established the newest trout nursery operating under the direction of the Cooperative Nursery Branch of the Pennsylvania Fish Commission. The organization is the LYCOMING CREEK ANGLERS' CLUB which is based at the village of Ralston, along Lycoming Creek in Lycoming County.

In its first full year of operations the club has 1,000 brown and 1,000 brook trout fingerlings growing in its nursery raceway. Plans are being made to build an additional raceway for use during 1978 or 1979.

The raceway now in operation is about 85 feet long and is built of concrete. The cost of the project was \$2,200. Funds were provided by club membership fees and by donations of materials and money from its members.

The club began its operations in 1976, when it purchased about 200 trout from a private hatchery and placed them in a large pond owned by one of the members. These fish were fed during the winter and in the spring of 1976 were released in Lycoming Creek and five tributaries. A dozen or so of the fish were 16 to 23 inches long, and these were tagged before being put into the streams. Recovery of the tags of the fish that were caught showed that the fish moved over a long range of water.

Results of this stocking encouraged the club to begin planning a cooperative nursery. Robert H. Brown, chief of the Cooperative Nursery Branch of the Fish Commission, was contacted and became an invaluable consultant and adviser. Mr. Brown and his staff guided the club in its raceway construction.

There never was a question of adequate water of excellent purity and temperature. The raceway now in operation is fed by a mountain stream that tumbles over a falls just north of

Clean cold water for the Lycoming CO-OP is provided by a nearby stream which maintains more than an adequate flow even in the middle of summer.



Raceway is about 85 feet long and another of similar size is planned.



the installation and, even in the middle of summer, provided enough water for operation of two raceways. It has been necessary to divert part of the flow of the stream past the raceway now in operation.

In July, 1977, the Fish Commission provided fingerlings for stocking purposes. The growth rate of these fish, which are fed crushed pellets, has been excellent.

The club keeps careful and detailed records of its operations and forwards

the data to the Cooperative Nursery Branch. Regular inspections of the project are made by the Fish Commission staff.

The Lycoming Creek Anglers' Club was formed two years ago and already has a membership of about 400, including trout anglers from considerable distances outside Lycoming County. Current officers of the club are James Boyer, president; Al Schneider, vice president, and Al Boyer, secretary-treasurer.

Ashore & Afloat

by Gene Winters

If you're the type of person who, to say the least, is disturbed and frustrated by Detroit's replacement of dash panel instrument gauges with idiot lights, you'd tear your hair out if you saw the instrumentation you get (or don't get!) in some yachts costing \$65,000 and more. Not that I own such a vessel or — even hope to someday, but I have climbed aboard quite a few. To me, there is little justification or logic (except reduced initial cost) for not providing proper and necessary gauge instrumentation, be it car or boat. I have seen runabouts in the ten to twelve thousand dollar range that had only a single readout — and a speedometer at that!

To illustrate, I recently picked up a little subcompact auto "distributed" by an American auto firm and built in four European countries. The first thing that greeted me when I turned on the ignition switch was reality. Staring at the dash panel, I quickly became aware of one of the car's weak points. Four small idiot lights had been provided to inform me (1) to fasten my seat belt, (2) release the parking brake, (3) the alternator wasn't working, and (4) the engine was overheating *OR* had lost oil pressure.

I had no feeling one way or the other over the seat belt light. Either you use them or you don't; no red light will cure a secret death wish. Brake lining replacement is too expensive to drive around with the parking brake

on. But the alternator light and the engine operating light caused concern. Especially the fact one bulb indicated the status of both oil pressure and water temperature. What makes this arrangement so insipidly stupid is that your reaction should differ depending on the cause.

If the engine light comes on because of overheating, you would shift into neutral and run the engine at fast idle for cooling and, in an auto, turn the heater on to help cooling. But if the same light indicated a drop or loss of oil pressure, you would shut off the engine immediately to prevent serious damage. Since idiot lights are famous for coming on only *after* serious damage has been done, their usefulness is, at best, very limited. With gauges and a watchful eye, you can, in most circumstances, see conditions changing *before* permanent damage is done, and often have time for reasonable evaluation of the situation.

Feeling as strongly as I do, it shouldn't be too surprising that I quickly corrected the auto shortcoming by purchasing and installing a set of gauges. It probably will come as little surprise, also, that I feel as strongly about instrumentation in a boat. I attempted to prepare a list, in order of priority, that I would recommend to my readers with gauge-less boats. But there are so many variations in boat sizes, types, engines,

electronics, etc., it darn near proved impossible. I did, however, prepare a listing (see Table 1) of the priority order I established for myself, for my boat. Scan the list and you should be able to select the gauges you desire or need.

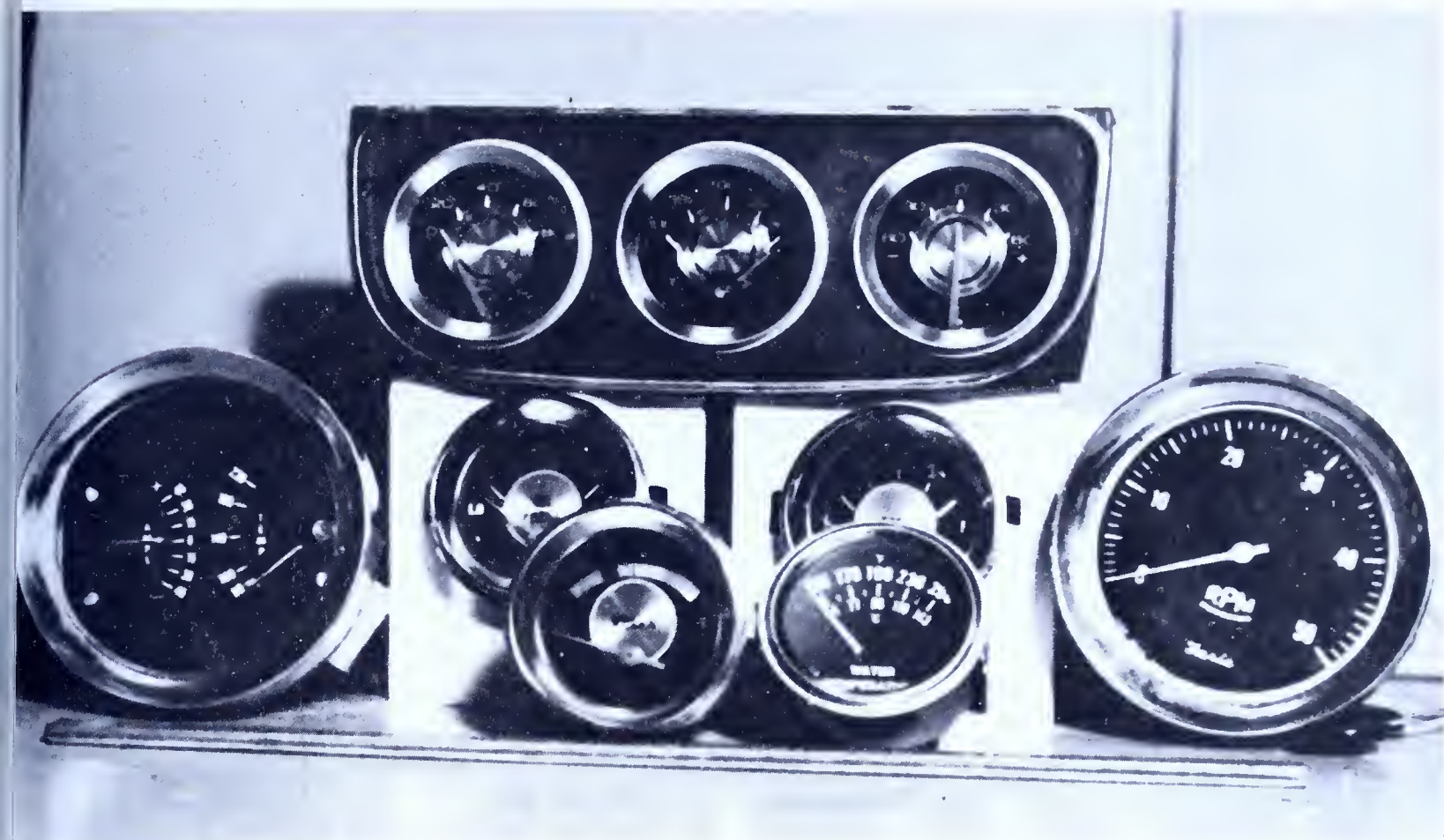
Let's take a closer look at the individual gauges:

FUEL LEVEL GAUGE — Every gas tank should have one, even the portable tanks. Running out of gas is no one's idea of fun and can even be dangerous. While admittedly lacking the accuracy desired, it beats finding out there's no gas when the engine coughs, sputters, and stops. With experience, you will quickly be able to eyeball an inaccuracy in your gauge. Be sure to learn the difference in readings with a given amount of gas when you are up on plane and at rest. For fuel level, a float within the gas tank moves up and down and contacts a variable resistor. The resistor controls the amount of current (signal) sent to the gauge.

VOLTMETER — If I had to choose between a voltmeter and an ammeter, I'd choose the voltmeter any day. I never could understand why automakers cling to the more expensive, less-informative ammeter circuitry. The voltmeter immediately and continuously indicates the voltage condition of the battery, voltage regulator, and generator or alternator. It

TABLE I.

GAUGE	COMMENTS
<i>Fuel Level Gauge</i>	<i>Requires float in gas tank.</i>
<i>Voltmeter</i>	<i>Indicates battery condition and other electrical circuits.</i>
<i>Water Temperature Gauge</i>	<i>Indicates temperature of water circulating inside engine.</i>
<i>Oil Pressure Gauge</i>	<i>Indicates oil pressure of engine lubricating oil.</i>
<i>Tachometer</i>	<i>Indicates engine revolutions per minute.</i>
<i>Engine Hour Meter</i>	<i>Tabulates engine running time.</i>
<i>Engine Oil Temperature Gauge</i>	<i>Indicates temperature of engine oil.</i>
<i>Transmission Oil Temperature Gauge</i>	<i>Indicates temperature of oil or fluid in transmission.</i>
<i>Vacuum Gauge</i>	<i>Indicates manifold vacuum pressure.</i>
<i>Ammeter Gauge</i>	<i>Indicates charging or discharging current.</i>
<i>Speedometer</i>	<i>Indicates speed through water.</i>
<i>Gallons Per Hour Meter</i>	<i>Indicates amount of fuel being consumed.</i>



Meters come in all sizes and types. Upper row: auto type gauges that are adaptable to boat use. Center: four small gauges are marine store gauges; larger gauges on each side are marine type for in-panel mounting.

helps alert you to faulty belts, loose battery connections, excessive starting circuit drain, etc. It does everything an ammeter does and then some. The gauge selected should read out at least over an 8-16 volt range. It does not require a sending unit.

WATER TEMPERATURE GAUGE — Indicates engine operating temperature (water circulation temperature). Available for outboards, usually in a 50-200 degree readout range. Gauges for inboard and I/O engine usually read 100-240 or so degrees. Warns of clogged intake also. Requires a sender unit at the engine.

OIL PRESSURE GAUGE — Displays oil pressure, avoiding costly engine repairs caused by incorrect oil pressure, defective oil pumps, clogged filters and oil lines, etc. Usually reads 0-60 pounds. Requires a sender unit at the engine.

TACHOMETER — Indicates engine speed in revolutions per minute. Helps detect changes in engine conditions, etc. by showing any variation from a known "normal" reading in rpm at idle or at a given throttle set-

ting. Helping hand in selecting proper prop to avoid lugging or overwinding engine; helps detect prop and/or shaft damage. By plotting time/distance/rpm curves it can take the place of a speedometer. Available for all types of engines but not all models are interchangeable.

ENGINE HOUR METER — Keeps engine operating log automatically, aiding in programming maintenance. Useful in plotting, such as time required for return trips, estimating gas consumed in a given time, etc.

VACUUM GAUGE — Reads engine manifold vacuum; gauge usually reads 0-30 inches of vacuum. A normal reading for a warm engine at idle is around 17 inches. At hard throttle, drops to around 4 or 5 inches. Vacuum gauges, in theory, can indicate a variety of problems — but, since even mechanics have trouble interpreting the readings correctly, *so may you*. Often used as an inexpensive fuel flow indicator — the lower the reading, the more gas being consumed. May be difficult to install in some boats; requires a small

diameter plastic tubing between the gauge and engine.

ENGINE OIL TEMPERATURE GAUGE — Although not in common use even in autos, can be a valuable gauge. The engine oil temperature gauge often indicates engine overheating faster than the water temperature indicator. Usually reads in the range of 140-320 degrees. Requires a sender.

TRANSMISSION OIL TEMPERATURE GAUGE — Often used by those who tow heavy trailers long distances with autos equipped with automatic transmissions. Useful in boats with automatic forward/reverse transmissions, they also help detect leaks in transmission coolers by showing heated transmission fluid temperature. Usually reads in 130-325 degree range. Sender required.

AMMETER — Indicates charging rate or excessive current drain. To me, a gauge of limited value. Meter movement is usually so slight, particularly in alternator circuits, as to be almost undetectable. I'll take the voltmeter if a choice must be made. No sender required but needs a special wiring har-

ness or very heavy gauge wire.

SPEEDOMETER — The “ego” gauge of the lot, in my book. Reads *speed through the water* as differed from speed over a covered distance. If you are going at a set speed in still water, you will read a speed through that water. But what happens if, at the same speed, you suddenly run against (or with) a 3-knot current? What, if anything, happens to the speedometer reading? What happens, if anything, to time? Is your boat going the same speed? Faster? Slower? Think about it for a while . . . and you’ll understand the difference.

GALLONS PER HOUR METER — While currently an expensive, prestige instrument, this gauge system may be coming into its own. Price has dropped to around seventy-five dollars and should come down more as use increases. It helps you go easy on the throttle by displaying a constant read out of actual gallons of gas being consumed any time you care (or dare!) to read the meter. The GPH meter allows rewards for proper trimming of passengers and cargo, obtaining minimum gas consumption. By plotting speed/distance/fuel curves, you can select optimum cruising speed. One manufacturer makes a compatible (with *his* GPH meter) unit that measures and displays total fuel used (continuously), allowing you to quickly determine remaining fuel. A good quality GPH meter (there’s some junk coming on the market aimed at the fuel-conscious car owner) can, if used properly, force you to become aware of fuel consumption and a heavy hand on the throttle. In addition, it will be superior to any fuel gauge I’ve ever seen. *Since installation requires insertion of the sending unit in the fuel line, it should only be installed by fully qualified personnel.*

Years ago, most gauges were mechanical. Today, most gauges are electrical although a few, like oil pressure, still are around. Be sure to specify electric gauges (where applicable) when you place your order. Make sure the correct wire size (gauge) is used, circuits are properly fused, and installation follows standard, accepted practices, including any peculiar to marine installations. If you’re adding gauges to a second station, such as a flybridge, you’ll have to

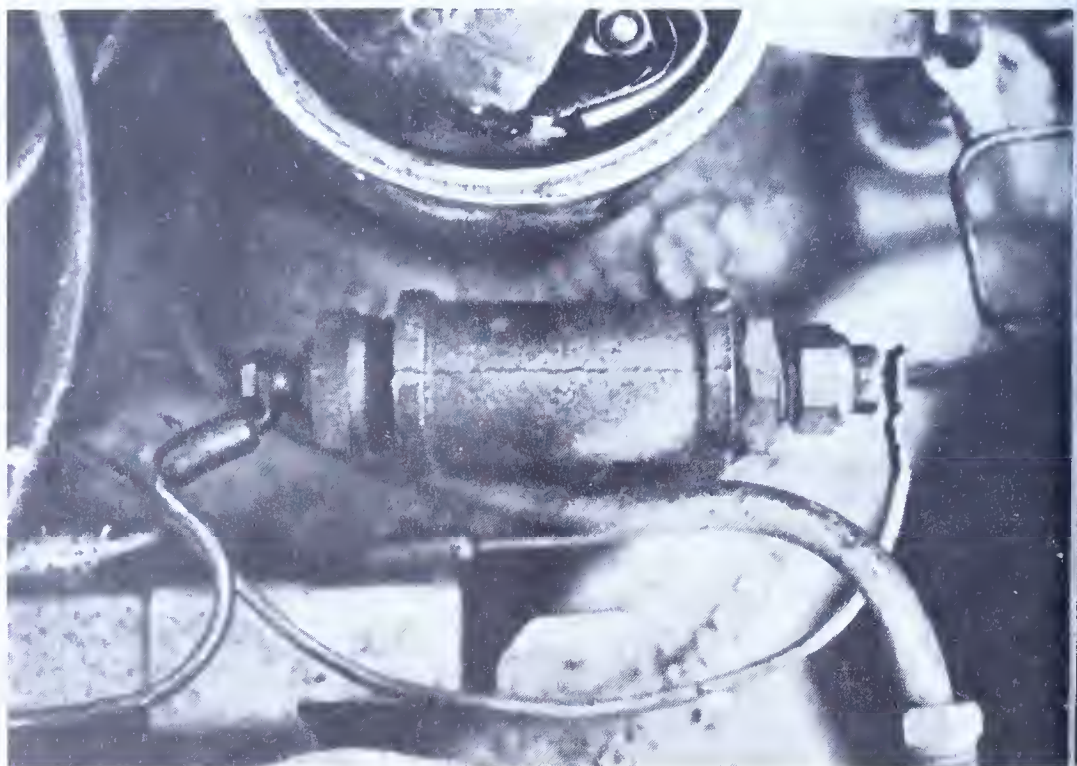


The gauge on the left (above) is a dual purpose affair: a temperature gauge and an ammeter. The right gauge is an RPM meter.

replace the present senders with dual sending units. A dual fuel gauge sender is available but is very difficult, if not impossible, to obtain. A toggle switch or 12-volt relay can be used to feed information to the desired gauge *but this installation should only be performed by a fully qualified mechanic, experienced with fuel lines and gasoline hazards.*

Summing it up, gauges are a relatively low-cost way to properly maintain a very expensive piece of machinery. The security of knowing all systems are go — or more importantly, *when they’re not* — can quickly repay the investment in peace of mind. Especially since the engine that takes you out is the same one you count on to bring you back.

A typical water temperature “sending unit,” below. This one “feeds” gauges in both cabin and flying bridge instrument panels.



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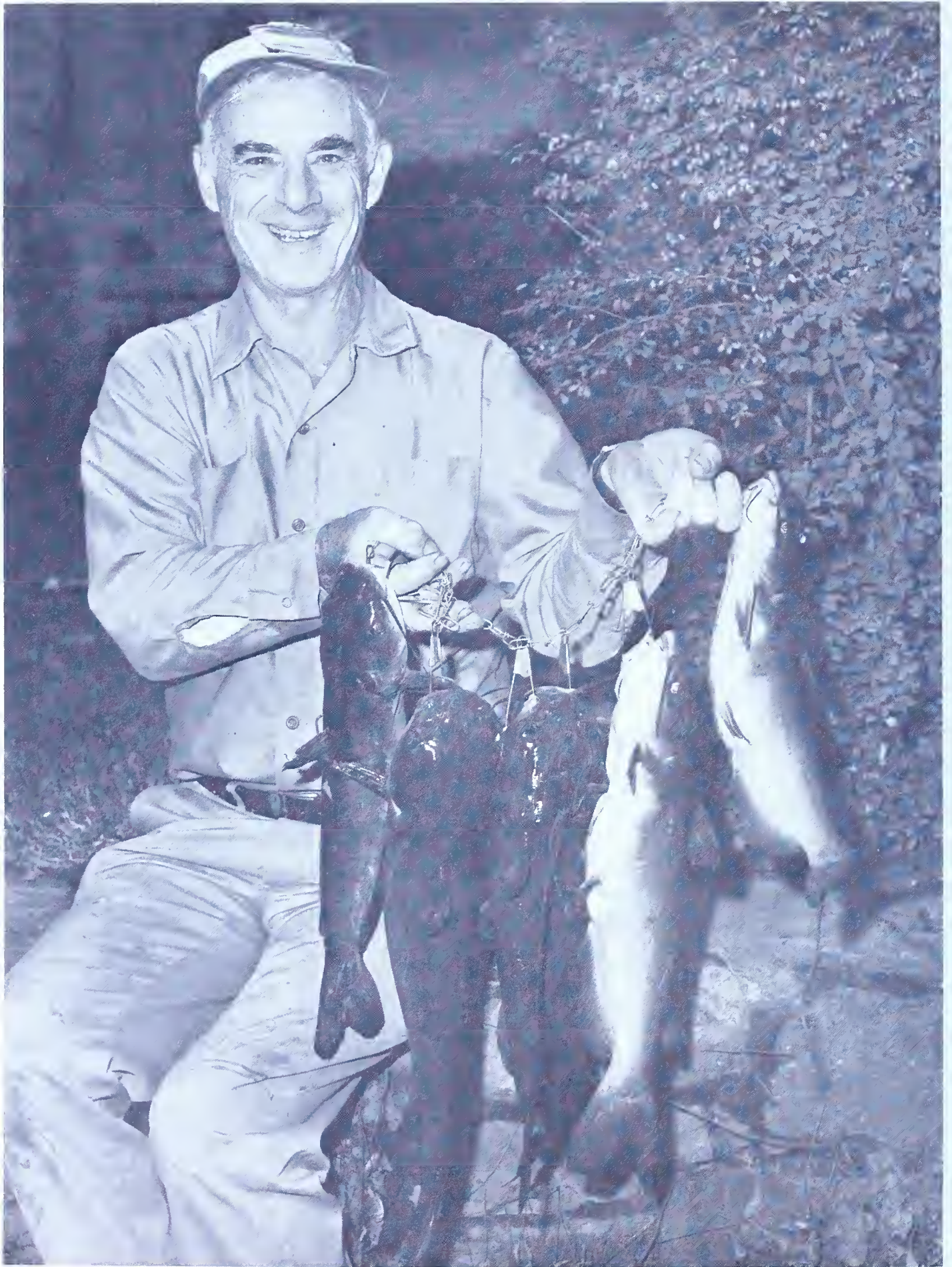
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Susquehanna River Channel Catfish



PENNSYLVANIA

APRIL 1978

Angler

the
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FISHING-BOATING
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The Case for Autonomy

The reorganization syndrome seems to be part of most federal and some state administrations coming into power and showing itself in Washington now. Reorganization, by whatever name, usually involves consolidations and the inferred promise that "this is just what is needed and all will be well."

Our membership in interstate organizations gives us more and more contact with the agencies in other states, as well as the federal establishment, and we can't resist asking questions: Are the restructured agencies realizing the improved economic efficiencies, better coordination, enhanced resource management and the other expectations as predicted?

From conversations with state administrators of those independent agencies in fish and wildlife still left in this country, we gather that consolidation is regarded now as a backward step, a step back to those days when politicians, not professionals, shaped agency programs. By all means, the best measure of an agency in the broadest sense is its success in managing the resources with which it has been entrusted. Although no one has adopted a universal scale for such measurement, we feel that an agency's potential is favored by having the strongest possible hand over budget and policy formulation, its personnel and other key elements. This enables its Director and Commission to act, to lead, and to manage within the limits of available experience, the budget, and their statutory authority.

Those Directors who have suffered consolidation are quite vocal in stating that there is a tendency to lose identity, traditional funding is diluted, law enforcement is called upon to do other things, research is being challenged, administrative control is lessened and the decision makers have little understanding of fish and wildlife needs and programming.

As one of the few truly independent administrative agencies left in the country, we think . . . no, we firmly *believe* that the Pennsylvania system of separate independent agencies charged with the protection and management of our fish and wildlife resources is right — and that the multi-agency department is wrong. We base that conviction on the following reasons:

EFFICIENCY: We maintain that the smaller the organization, the easier it becomes to supervise and train employees so that they perform their assigned tasks at peak efficiency. Communication between its members is quicker and in general we believe that the smaller the organization, the easier it is to control and the closer knit it becomes.

EXPERTISE: We live in an age of specialization, not because it is magic but because it is humanly impossible to be proficient in everything. The world is full of "environmentalists" today but show me a single person who knows all there is to know about every element of the environment. When we get sick, we want a team of specialists to repair our human ecosystem; likewise, all the backup of specialists needed to find the cure. I have yet to see a wildlife biologist who knows much, if anything, about making a stream or lake survey — nor do we have any fisheries biologists on our staff who are totally capable of making a waterfowl census. Our law enforcement officers have more than enough to do year-round related to fishing, boating and water pollution abatement, yet I know that in many states conservation law enforcement officers are now expected to enforce the laws and regulations dealing with not only game, but fish, snowmobiles, boats, all-terrain vehicles, littering, forest fire prevention, water pollution, air pollution, and so on, as well as being the primary contact with the public. This is far too much to expect from any one human being no matter how intelligent and capable he may be. The result is that no single phase of the job ever really gets completed.

ECONOMY: There are some who believe that we can save money by consolidating natural resource agencies. I doubt that any state or federal government cost analyst can ever prove it. An in-depth study was made in Pennsylvania in the 50's and the early 70's. Among the conclusions reached in the studies was the fact that consolidation would accomplish no significant savings in money.

EFFECTIVENESS: Although within the Fish Commission we do have disagreements on management policies, programs and priorities — not always do staff members, employees, or the Commissioners agree with our decisions, but I do know that when the chips are down every single one of us is united in our desire and dedication to protect, preserve and produce the best water quality possible in our rivers, streams and lakes, as well as to provide the best fishing and boating opportunities for all who are interested in those types of outdoor recreation.

Dr. Dan Poole, President of the Wildlife Management Institute, sends us this quote: "*We trained hard, but it seemed that every time we were beginning to form up into teams, we would be reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing — and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization.*" That was by Petros of Arbiter of the Greek Navy, and it was dated 210 B.C.

Ralph W. Abele,
Executive Director

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

Published Monthly by the
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April, 1978

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ON THE COVERS

“End of the line!” A fisherman lands his quarry from Lawrence County’s Neshannock Creek. Especially popular all season long is this section near the Jack Gerson Bridge at the Fish Commission’s Access Area. Photograph by Thad Bukowski. Kettle Creek, back cover, has its devoted followers and Staff Photographer Russell Gettig “caught” some of them in action.

MONTHLY COLUMNS

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James F. Yoder, Editor

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DELAWARE RIVER SHAD STUDY GROUP SEEKS HELP FROM ANGLERS

The Delaware River Basin Anadromous Fishery Project is seeking angler volunteers to aid in determining the size of the river's 1978 American Shad spawning run. Utilization of both sport fishermen and fishery biologists is necessary for determining an accurate shad population. Biologists will be tagging and releasing shad at Lambertville, N.J. from March 27th through May 5th during the fish's annual spring upriver migration. Volunteer anglers will be provided a logbook to record their Delaware River shad fishing effort and catch.

Logbook keepers will receive a Service Award Certificate and a report of study findings for their participation. Additionally, any angler catching a tagged shad will receive a monetary reward, plus a Tagged Shad Certificate.

If you wish to participate in the study (volunteers are requested to make at least three shad fishing trips), or desire additional information, send a postcard to:

CARL BAREN
SHAD STUDY
P. O. Box 95
Rosemont, N.J. 08556

The anadromous fish project is a cooperative effort of the Pennsylvania Fish Commission, New York Division of Fish & Wildlife, New Jersey Division of Fish, Game & Shellfisheries, National Marine Fisheries Service and the U.S. Fish and Wildlife Service.

"WHY?"

FEBRUARY 7, 1977

In recent years, many of us found access to fishing waters which were once very hard to find. This I appreciate. I found them to be plain and very functional. Last summer, in Juniata County, at least two (how many more??) of these access areas were black-topped. Why? It didn't help the fishing. How many licenses did it take to pay for this? Are we overloaded with funds?

I will be more than interested in hearing a *good* logical reason (or reasons) for such irresponsible action on the part of the Commission.

If bureaucracy holds true to form, I suppose it's now time for a license fee increase, because, of course, we need more money to operate.

Sincerely
ED DYER
Lewistown

(Editor's note: the above was received with the word "irresponsible" encircled and instructions to "see other side" — which follows.)

SEPTEMBER 26, 1977

As you can see, the original letter was written last winter. I held the letter chiefly because of the word encircled in red.

Since my prognostication is coming true, I decided the encircled word should no longer halt my opinion.

Sorry for the criticism. I find *most* of the Commission endeavors very worthwhile.

Dear Mr. Dyer:

I received your recent letter directed to the editor of the *Pennsylvania Angler* which questions the improvements made at the fishing and boating access sites maintained by the Commission on the Juniata River.

I am happy to hear that you have enjoyed the use of these facilities and am grateful for this opportunity to explain why these improvements were made. As you know, the Fish Commission is independently funded and must operate on a businesslike basis. We are not in the same position as tax-funded agencies which simply ask for more and more tax dollars each year. As a result, we use a portion of our development funds to upgrade our hatchery and public use facilities in a constant effort to reduce our operation and maintenance costs.

When the decision was made to pave the Muskrat Springs Access Area, we carefully studied our past and present maintenance costs on the unpaved entrance road, parking area, and launching ramp. These costs, when projected at the then current 8% rate of inflation, when compared with the cost of paving this area showed the initial cost of the paving effort would be fully recovered in less than 14 years. This projection also revealed that at the end of that period, and for perhaps an additional 15 years, our annual maintenance savings would average nearly \$2,500.

In addition to these long-term savings, the users of this area will accrue additional benefits which cannot be given an accurate cost value. These benefits include elimination of dust and mud on their vehicles, trailers and boats, provision of a stable launching area for maneuvering cars and trailers, better traction when launching and

retrieving boats and other obvious user advantages.

Mr. Dyer, the Fish Commission has been in the business of developing, maintaining and operating fishing and boat access sites for nearly 25 years and our experience during this time has shown that permanent paving of our more heavily used facilities has resulted in substantial savings of maintenance dollars, thereby providing more funds for development of additional access areas throughout the Commonwealth. The funds expended for development of new sites today would not be available if many of our facilities had not been up-graded in earlier years. It is a proven fact among private businesses that capital development funds frequently must be expended in order to make long-term cost savings and the Commission has also found this to be true.

Your letter indicates that you are primarily concerned that fishing license money has been used for this improvement. In reality, the facilities on the Juniata River are considered as joint fishing-boating areas and development and maintenance costs are borne by both the Fish and Boat Funds. We are not overloaded with money in either of these funds. In fact, just the contrary is true: inflationary costs and higher personnel costs resulting from collective bargaining awards by the Office of Administration continue to tighten our budgetary constraints. If we had not made major improvements to our hatchery and public use facilities when funds were available I can assure you that the Commission would not be operating nearly as efficiently as it is today, and maintenance and operating expenses would be so overwhelming that many of these facilities would be impossible to maintain for public use.

The Commission places high priority on the access area program and feels that the facilities such as those on the Juniata River which have become very popular and provide great recreational opportunities for many people should be maintained in first class condition.

Thank you for your interest in our program and I hope that I have sufficiently answered your questions. Also, I hope you continue to enjoy the use of our facilities.

Sincerely yours,
Edward R. Miller
Assistant Executive Director
Fisheries and Engineering

"SCAVENGER"?

Recently I noticed a lot of tiger muskie in the Raystown Branch of the Juniata River. To my dismay, I learned that you recently stocked a large number of the fish.

I have enjoyed fishing this section around Everett for over 30 years and found it to be great for smallmouth bass.

well as rock bass and sunfish. My children especially enjoy the great panfishing the Raystown has. I am concerned as to why the Pa. Fish Commission would risk any change to this fine fishery by introducing such a scavenger as the tiger musky. Would you please try to give me some answers.

Enclosed please find \$7.50 for a 3-year renewal to your fine magazine. Thank you.

ROGER I. KEITH
Brockway

Dear Mr. Keith:

Your recent letter concerning the stocking of tiger muskellunge in the Raystown branch of the Juniata River has been referred to me for reply. I really do not understand why you are dismayed about the stocking of the tiger in the Raystown branch. You must have heard some of the wild tales which used to be prevalent along the main stem of the Juniata. Tales like "the muskies ate all of the bass and rock bass," or "those Fish Commission guys ought to have their heads examined for putting a vicious fish like the musky in the Juniata, they'll eat everything up!"

I can assure you, Mr. Keith, that the panfish in the Raystown will be just as abundant, only maybe larger, since the introduction of the tiger and your children will retain both legs and hands when they go in and out of the water there.

The horrible stories you have undoubtedly heard about the musky or the hybrid tiger musky are totally unfounded. The truth of the matter is that not too far from you in the Allegheny River, the musky has evolved and lived for untold centuries among the bass, walleyes, northern pike, rockbass, sunfishes, catfishes and all the other species there. Have you ever heard of anyone advocating doing away with the musky in the Allegheny? Hardly. The same can be said of the Saint Lawrence River, Great Lakes and untold other waters in northcentral United States.

What may seem like a large number of tiger muskellunge (1,300 fingerlings) stocked in the Raystown in 1977, is indeed rather small when one considers that they are placed in 50 miles of river—26 per mile. Considering natural mortality factors after stocking, the number surviving would be expected to be less than the original planting.

Can you visualize 26 tiger muskies in one mile of a stream the size of the Raystown? Can you also visualize the many thousands of shiners, creek chubs, suckers, fallfish, sunfishes, small carp, rock bass, catfishes, crappies, smallmouth bass, walleyes and all the other species in that one mile section? Now 25, 50 or even 100 tiger muskies are going to harm the population of panfishes and gamefishes in the Raystown is far beyond my comprehension. The musky does

not push aside all the shiners, chubs, suckers, etc. just to get to the panfish and bass. Some people actually believe that! There are literally *tons* of forage fishes in a one mile section of the Raystown. They far outnumber the panfishes and gamefishes, and research has shown that when available, members of the pike family prefer soft rayed fishes to spiny rayed species.

In the hatchery, a tiger musky requires approximately three pounds of food to increase its weight one pound. Suppose we have a tiger musky of 30" which weighs approximately 6 to 8 lbs and it grows to 34" in one year and weighs maybe 10 to 12 lbs. In either example, let's consider that the tiger would have grown only 4 lbs. The growth of 4 lbs x 3 lbs of food (fish) for each pound of growth is equal to 12 pounds of forage *in a whole year*. Now in a stream a tiger could be expected to utilize some energy (food) in his swimming about. Suppose his movement caused him to consume 5 times more food per pound of weight gained than in the hatchery where the movement would be less. Then 4 x 15 = 60 lbs of forage. This could mean 60 one-pound suckers, 120 half-pound suckers, bass or whatever. Again, supposing that all 25 tigers lived and all were the same size as our example (which is highly unlikely). We would have, by using our inflated 60 lbs of forage, only 1,500 lbs of forage consumed by the tigers in one mile of stream — out of tons of other fish which during the year have also increased their numbers and weights.

I have intentionally portrayed a vivid picture to you to express how strongly we fisheries managers feel about the misunderstanding surrounding the introduction of large members of the pike family. We have sought in our statewide musky and tiger musky stocking programs to introduce a predator fish which can utilize a large unused forage base in many of our waters without adversely affecting the desirable panfishes and gamefishes. We have been very successful and have gained a tremendous following of musky fishermen alone. I would advise you to talk to Waterways Patrolmen like Jim Beatty, Bedford County, Jim Valentine, Huntingdon County, or their Supervisor, Richard Owens, about the entire musky/tiger musky program in their areas and the interest generated. I am certain that all will verify the fact that these much-maligned fishes have produced a very exciting new dimension in fishing in the Juniata River Basin. And best of all, this has not been done at the expense of the other valuable gamefishes and panfishes in the basin.

Thank you for your interest and comments. You have proven that we are not getting our message about our management of the pike family in Pennsylvania across to the fishermen. We shall try to do better.

Please feel free to write us again anytime about any of our programs.

Sincerely,
Robert B. Hesser, Chief
Fisheries Management Section

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MEALS from the CREEL

by Arthur J. Michaels

“If I’m landing a trout that I can envision on my dinner plate, I’d want to handle it carefully with my best methods,” says Ted Dingle, superintendent of Huntsdale’s fish cultural station. And just like Ted, every angler who stalks spring trout for the dinner table wants to keep fish as fresh as possible in the field until he arrives home. So what is the best method to creel fish? Or is there a system for creeling trout that might work better than your current *modus operandi*?

Maybe there is a better way. But procedures and practices for creeling catches are as varied as methods of shaving — trying the system that gives your buddy a close shave might leave you nicked and bloody. On the other hand, your buddy’s system of saving trout just might be your cup of tea, too.

Take a close look at Ted Dingle’s method and see. “When I save trout to be eaten, I keep them in my wicker creel. I slit them and remove the entrails. Then I usually put cress or grass in the creel. To keep the fish damp and cool, I just dunk the creel right in the water. When I bring the trout home, I try not to let them dry out, inside or out, and then I prepare them for the table right away or freeze them.”

Some anglers shun Ted’s wicker creel method, favoring less traditional ways of keeping spring trout. Wayne Weigle, superintendent of Big Spring’s fish cultural station, is one of those anglers: “The only time I eat fish is when I’m camping on a stream. I carry an old Army canvas bag to carry fish. I don’t clean them right away unless it’s a warm day, but I usually clean them within an hour of catching them.”

Then there are those anglers who operate best without a creel — wicker, army bag, or otherwise. Take Zenas Bean, Pleasant Mount’s fish

cultural station superintendent, who doesn’t even own a creel. He says, “Most of the time I clean the trout as soon as I catch them. I string them through the gills on a section of old fly line after I gut them, and then I keep them in the stream. I peg them along the bank in the area I’m fishing, or I just tie them to my boot.”

Even though these three trout experts save trout in different ways, the common denominator of their systems is the same: they take home fresh spring trout for their kitchens. And whether or not your creeling method is like theirs, you should handle your catch as they do to prevent spoilage.

There’s no magic to keep your catch fresh, but after you battle that frisky spring trout, bacteria and enzymic action work quickly — *like magic* — to spoil your fish. Successful creeling, without a magic wand, simply means keeping your catch at the right temperature, because bacteria — one-celled microorganisms — grow rapidly when your catch is below a cooking temperature but above a freezing temperature. Many nutritionists agree that the danger zone, the temperature at which maximum bacterial growth oc-

curs, is between 60° and 120° Fahrenheit. Bacteria, of course, cause sickness and disease, and they lower the quality of your catch by ruining the taste and destroying nutrients.

One strategy to creel fish without spoilage, then, is to keep the temperature of your catch as low as you can. When stream temperatures are low the stringer method works well. Gut your catch, string the trout, and peg the stringer to the bank or tie it to your boot at your ankle.

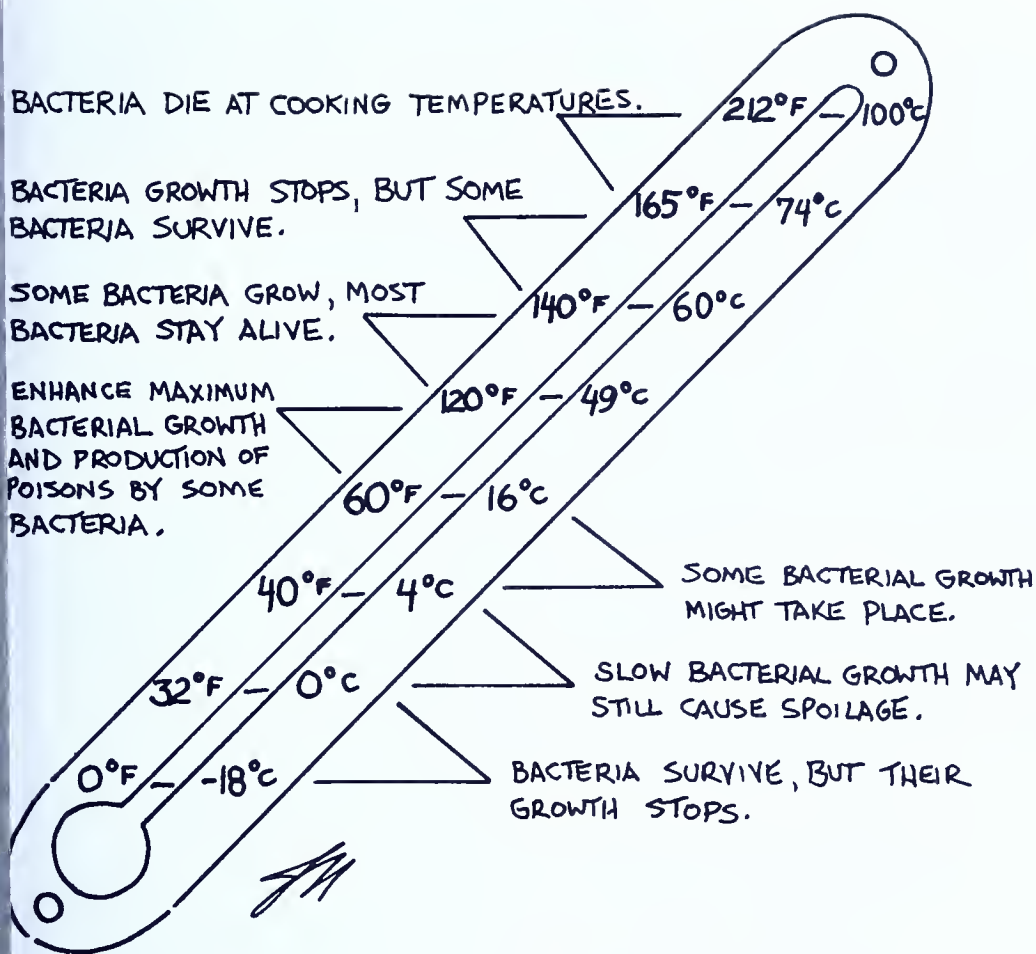
As the temperature of the air and water rises though, the creel becomes more and more efficient. When you put trout inside your creel, layered in damp grass as some anglers do, soa the outside. The temperature on the inside goes down as the water on the outside evaporates. Call it “the perspiration principle.” When the body becomes overheated, sweating on the outside cools the inside.

But a hot day even in early spring can be a creeling catastrophe, especially if you land a trout that’s too big for your creel. After you turn several somersaults of delight and cartwheels of joy on the bank, clean your lunk immediately. This means gut your fish and remove its entrails, at least.

Find a spring seepage along the

Catch ‘em . . . keep ‘em . . . cook ‘em . . . trout are tasty spring treats.





Cookbook — \$2.50 from the Pennsylvania Fish Commission — describe how to dress your catch, including step-by-step directions for its cleaning, skinning, scaling, and filleting.)

When you field dress your catch though, what do you do with the entrails? Do you throw them back into the stream to become part of that food chain again; or, do you bury them on land — a freebie for a marauding raccoon?

Before you discard those entrails in the water or the woods, you can increase your catch considerably by performing minor exploratory surgery. You can be one step ahead of every angler on the stream by knowing firsthand what your quarry is feeding on. And there's no hatch chart, complicated philosophy, or high-browed theory, either.

The proof, so to speak, is in the entrails. With a sharp knife or old fly-tying scissors, cut the trout's entrails open from the esophagus to the vent. Then, with your pinky, knife, or scissor point, probe through the contents, especially the undigested recognizable bits. When you find your trout's innards stuffed with caddis larvae or mayflies, little doubt remains about what fly to tie on. Right before your eyes will be the exact size and color of bait the trout are taking. For surefire action, offer them what they're already feeding on!

Inspecting your catch's entrails this way might also give you a preview to the trout's tastiness. Some fishermen swear that trout with empty stomachs taste better than trout with full stomachs, even though digestive juices are working in both. Their theory is that digestive juices hard at work on a full stomach adversely affect the quality of the trout at the dinner table — more so than a trout caught on an empty stomach. Scant objective data is available concerning this belief, but you can experiment to make your own judgment.

Catch fish from the same body of water with both gorged bellies and empty stomachs, not necessarily on the same fishing trip of course. Then cook them side-by-side and let your taste buds decide the verdict.

Consult your *Pennsylvania Anglers' Cookbook* for dynamite trout recipes. But this spring, for a delicious, out-of-this-world kitchen encounter of the best kind, creel those trout right!

stream bank and stash your gutted monster there. Covering the lunger with the damp grass and ferns that grow near the seepage should keep your trout cool until you head home.

If cooling your trout is the name of the creeling game, then the ice chest probably wins. If you're miles from your car, opt for a creel or stringer. But whenever it's convenient, store your catch in an ice chest.

Kenneth Sink, Trout Unlimited director of The Keystone State, prefers his method. He says, "I don't usually have trout. With the ones I have kept, the first thing I do is take a sharp knife and scrape off the scales. Then I slit them, take out the gills, pop out the eyes, clean the blood vein, and leave the head on. I wrap the trout in cheesecloth or paper towels to keep them moist, then I keep them on ice which I have ready in the car."

But unless you wrap your gutted fish in a plastic bag first, don't bury the fish in the ice chest. Lay the fish on top of the ice. The idea is to keep your trout moist but not wet, because water will soften the trout flesh. If you're going to eat your catch within

twenty-four hours, sprinkle a little lemon juice on your freshly cleaned fish. Lemon juice tends to firm up the flesh.

Whatever method you prefer for saving trout — the creel, the stringer, or the ice chest — experts advise always to clean your fish immediately after you haul them in. Sink's thorough method may sound gruesome. But even though you might not be thinking about it on the stream, cleaning your catch on the spot makes the difference between smiles and frowns at your dinner table later on. In fact, you can keep a fish unfrozen up to a week with no loss of flavor or nutrition if it's properly cleaned.

Trout lose flavor and nutrition at the dinner table because enzymic action of digestive juices work even after a fish dies. It can't be completely halted; but, cleaning your catch right away, removing the digestive organs, stops its digestive activity as much as possible. This enhances the taste of your fish. And fish organs like the liver and intestines are ideal places in which bacteria thrive. (The first seven pages of the *Pennsylvania Anglers'*

Bait Up

by Don Kingery

illustrated by

Ray Piccolin

INTRODUCTION

Why use bait? The answer is simple: to catch more fish. To a fish, bait not only looks like natural food, *it is natural food*. It moves, smells and tastes like natural food. The fish are used to it and less likely to be suspicious. Lunkers don't get big by falling for every artificial tossed their way. Catching them is simply a matter of giving them what they want; but, a wide knowledge of natural baits and their habits is also a great asset to the man who uses artificials. In fact it's one of the best foundations he can have. An angler familiar with the bait his artificials are imitating will know much more about where and when to fish them, and how to give them a truly lifelike action. If he is one who makes his own lures he will know the proper colors to apply to make them look more natural, thus increasing his chances of a strike.

Many purists consider bait fishing unsporting, stating that it is too easy and doesn't constitute a challenge. This couldn't be farther from the truth. It takes a lot of skill and knowledge to fish bait in a lifelike, natural manner. You can cover a given area of water faster with an artificial lure but covering the same area with bait — properly — will get you more strikes. There are days when fish just won't take artificials, often following them to the boat and turning away. But few fish will turn down natural food that is properly presented and proper presentation is one of the keys to successful bait fishing. The other two are the *capture* and *care* of natural bait to insure its freshness. These three are essential to live bait fishing. To attract gamefish bait must be as active as possible; and, to be active on the hook, it must be kept as healthy as possible before it is used. Thus, methods of *capture* and *care* of natural baits are as important as fishing them.

It is the purpose of this column to familiarize the angler with techniques for capturing and keeping natural baits, and with methods of fishing them that insure the most success. To the vast majority of anglers (and bait dealers) the definition of the word bait is limited to worms and minnows. Therefore, it is also the purpose of this column to familiarize the average fisherman with as wide a variety of baits as possible. Some fish prefer insects over worms. Some baits are not native to certain streams and fish won't touch them; other times, in heavily fished areas the fish are exceptionally wary and you'll clean up with a bait they're not used to. The man who has the greatest variety of baits at his disposal is the one who will have the greatest success.

EARTHWORMS

First in popularity among live bait is the lowly earthworm; it's easy to collect and appeals to all species of fish. Earthworms fall into three categories: the large nightcrawlers, the manure worms, and red worms (also known as angleworms, fishworms and red wigglers).

Manure worms, also known as dung worms, stink worms (for obvious reasons) and fecal earthworms, live in manure and sewage. They are thinner than regular earthworms, growing to a maximum of five inches, but last longer and more lively on the hook. When hooked these worms often give off a yellowish liquid with a foul odor but this doesn't seem to bother the fish. These worms are easily gathered by spading in and around a manure pile. Keep them in a container with damp moss or leaves and keep them cool. If you keep the container refrigerated, or in the shade, the worms should live for several days. If you want to start your own colony of manure worms, simply buy a couple of bushels of fresh manure and dump it on a damp area of your yard. Odds are you got some worms and their eggs along with the manure but, if you want to be sure, just dump a dozen or so worms on the pile. It won't be long before you have a thriving population. Just make sure the manure doesn't dry out and you'll have bait all year — even in winter.

Nightcrawlers (larger worms from four inches to over a foot in length)

are traditionally gathered at night when they come out to forage and mate. Two other common names for this annelid are "nightwalker" and "dew worm." Arm yourself with a weak light (strong, bright light spooks them easily) and a jar, and confine your hunting to the moist areas of your lawn. If you don't have any naturally moist areas, soak the area in which you intend to hunt for a couple of hours beforehand. The most productive times will be warm nights after an all day drizzle. A good trick is to cover your light with red cellophane. The red light doesn't seem to scare them as much as white. Worms are easier to catch in short grass, so hunt on private lawns, church lawns, hospital lawns, golf courses and other areas with well-kept grounds — *but always obtain permission first*.

Walk softly (worms feel the vibrations and dart back down their holes) playing your light three to four feet in front of you. When you see a "crawler," slowly lower your hand to within six inches of it and then make a quick grab with your thumb and first finger. Now pull gently until the worm tires and allows itself to be drawn out of the hole. Don't grab too hard or pull too hard or you'll injure the worm. Keep all injured worms in a separate container and use them first (they emit secretions that disturb the healthy worms).

To collect nightcrawlers during the day, mix up a solution of mustard and water, or warm soapy water, and pour a tablespoon of it down the hole. The worm will come to the surface in a couple of minutes. There are also commercial products designed to bring worms to the surface available at your local sporting goods store. All worms captured by this method should be rinsed in clean water immediately. If you're in a lazy mood, or in too big a hurry to gather your own nightcrawlers can be purchased from local bait dealers. They are usually sold by the dozen at prices ranging from forty-five cents to a dollar.

An unusual technique for bringing worms to the surface is "grunting" or "buzzing." Sharpen one end of plank and drive it into a damp but firm area of earth. Now, take another plank and rub it across the top of the first so as to produce a vibration or buzzing. Keep repeating this and you will raise worms up to seven feet away

from the plank. Another method is to jab your garden fork into the ground and gently wack the handle with a stick or broom handle. This works, but isn't as effective as the former method.

For those of you who like to dig for worms, first look under any boards, rocks, newspapers or wet leaves you can find. If this doesn't produce, grab your pitchfork (only an amateur uses a spade!) and head for damp ground. The richer the soil the better. A compost heap or manure pile will be literally crawling with earthworms, and a good garden will be in these a close second. Confine your digging to the top eight inches of the soil because during the summer months worms are most active in the top four to six inches of earth.

An all-night rain will force earthworms out of their burrows, and early the following morning they can be gathered by the hundreds along streets and driveways. All else failing, you can buy worms from your local bait dealer or order them by mail from worm farms. Every outdoors magazine contains at least two dozen advertisements for worms with prices ranging from five to seven dollars a thousand.

If you do a lot of fishing you should seriously consider raising your own worms. It's easy, cheap and assures you a constant year-round supply of lively worms. Indoors, raise them in boxes about 12 inches by 24 inches by

6 inches deep. Drill six to eight quarter-inch holes in the bottom for drainage, and put in a layer of burlap or an inch of hay. Next fill the box two-thirds full of compost made of one part manure, one part sifted topsoil and one part Canadian Peatmoss. If you can't get Canadian Peatmoss, dry leaves, grass, or old rotted sawdust will do. Add your worms next. Save any left over from fishing, or buy starter stock from a dealer. Always pour worms onto dirt — never pour dirt onto worms as you may injure them. Put a layer of damp burlap on top and you're set. The box should be damp, but not soaking wet, and kept at a temperature between sixty and seventy degrees Fahrenheit for best results. Feed the worms occasionally by sprinkling cornmeal, oatmeal, grass cuttings, leaves, coffee grounds, or any other kitchen garbage on the surface and covering it with a thin layer of soil. You can also buy commercial worm food from dealers. Once a month dissolve a little lime or baking soda in water and sprinkle it on top to keep the compost from becoming too acid. Worms are bisexual and very prolific; you'll soon have a large colony. But, don't worry about overcrowding as a box of this size will hold six to seven hundred worms comfortably.

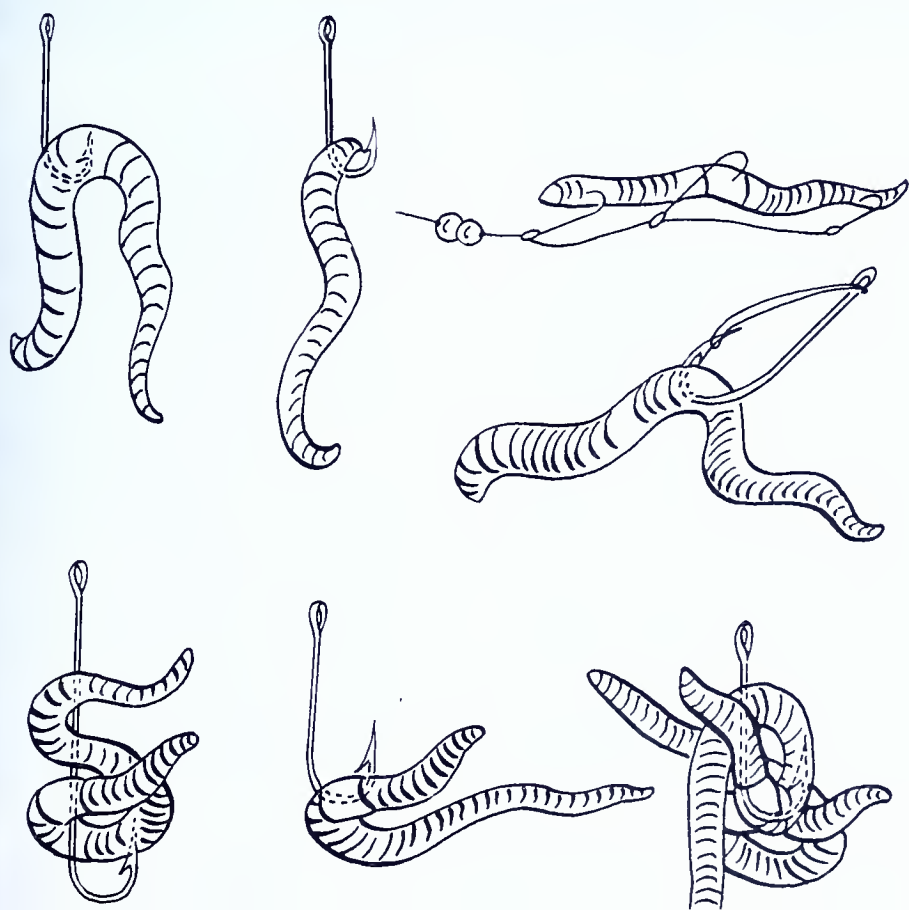
Raising earthworms outside is even easier but during the cold winter months you can't dig them. Dig a large pit about four feet by eight feet

by two feet deep, and put five or six inches of sand and gravel in the bottom for drainage. Next put in a layer of boards and fill the pit with compost, topping it off with one or two layers of burlap. Feed the worms all of your kitchen garbage, grass clippings, and leaves. Water the pit once or twice weekly to keep it damp, and the worms will thrive. At full capacity, a pit of this size will hold over fifty thousand worms — that should supply even the most avid fisherman.

Smaller amounts of worms can be kept for short periods of time by putting them in damp topsoil or moss in a cool, dark place. They can also be kept alive in a refrigerator for several weeks. It's an old trick to put worms in damp moss the day before you plan to go fishing. This tends to scour the worms and toughen them so they last longer and are more lively on the hook.

There are a variety of ways to hook earthworms but most people agree that the best are the ones that keep the worm on the hook securely yet allow it to wriggle as much as possible. The clitellum, or "band," is the toughest part of a worm and worms should be hooked through it whenever possible. For trout fishing, worms are traditionally hooked once through the center, allowing both ends to dangle. The worm is then cast across or upstream and allowed to drift in as natural a manner as possible, the angler giving slack and "jigging" the rod tip to help prevent drag and preserve the natural drift. For fishing in fast riffles the worm is hooked once through the head, leaving the point and barb exposed. For trolling or casting the worm should be hooked through the "head." The hook is then turned and inserted again so that the point is buried and the rig is weedless. For short-striking fish, a two- or three-hook harness should be used, with hooks at the head, center (optional) and tail. For perch and other panfish, hook a small worm several times and let about one inch dangle at each end; or, use parts of large worms and completely cover the hook. Two or more worms on one hook are attractive to all fish — especially in still or slow-moving water.

No matter how you decide to hook them, always remember to change worms as often as necessary to keep them fresh and lively.



INVENTORY & CLASSIFICATION

A New Approach to Managing Trout in Pennsylvania

by Delano R. Graff, Chief
Division of Fisheries

TROUT and the recreation provided through angling for trout are an important part of the Pennsylvania Fish Commission's program. Trout fishing has traditionally been one of the most publicized and promoted of all the angling opportunities available in Pennsylvania. Recent surveys indicate that as many as 70% of Pennsylvania's licensed anglers may fish for trout at least once a year. The Pennsylvania Fish Commission has responded to this interest (and perhaps generated much of it) by stocking over 4 million catchable size trout annually. In addition to trout produced in Commission hatcheries, another three-quarter million catchable size trout are stocked annually by Cooperative Nurseries — sportsmen's groups rearing fish for stocking in waters open to the public. Opportunities for the trout angler are enhanced even more because Pennsylvania has a substantial resource in wild trout.

Trout streams, at least what are generally considered by anglers as "trout streams," vary greatly. A stream that is considered a trout stream because it is stocked with trout may, in fact, be quite marginal for trout much of the year. Standards for stocking trout are based on minimum requirements to sustain trout until about midsummer. In most instances, hatchery trout are intended to provide recreation and are regarded as temporary users of the environment. This means that a

"trout stream" can be anything from a stream barely meeting the minimum requirements for stocking with hatchery trout to very fine trout habitat which supports a significant number of wild, "stream-bred," trout.

There is no clearly defined point at which streams cease to be stocked trout waters and become wild trout waters. Rather there is a gradual progression with a number of streams fitting between the two extremes; that is, we find many streams which support a low to moderate population of wild trout but need to be stocked to meet angling pressure. Even streams that are clearly wild trout waters differ in character, ranging from small infertile headwater areas containing brook trout to relatively large fertile streams supporting impressive populations of brown trout. There are also a few wild rainbow trout populations in Pennsylvania. All wild trout waters do have one thing in common, they meet the life requirements of trout year around. The important distinction between wild trout and stocked trout waters is the quality of habitat relative to the requirements of a self-sustaining population of trout. Without good water quality and suitable habitat, one simply cannot have wild trout.

As demands for angling opportunities increase, pressures on our trout streams—both stocked and wild—increase. We have more and more people making demands on the same resource, competing for the

same things. We can ill afford to lose any trout habitat, not even the most marginal of our stocked trout waters. Unfortunately, angling pressure is not the only factor making demands on our trout streams. Trout habitat is often affected, directly and indirectly when other interests compete with recreation for the "best" use or the most "economically beneficial" use of watersheds.

It is to be expected that, in a state with approximately 12 million people, trout habitat requirements and people's "needs" will more than occasionally be in conflict. There are many examples of this conflict — too many — but consider only the most obvious: development for housing — the proliferation of home housing developments, trailer courts, shopping malls, cottages or camps in the mountains; the growing need for energy — higher prices have made the development of new oil and gas wells and the stripping and restripping of coal seams previously not considered prime sites economically attractive; development of flood plains — inevitably this results in pressures for flood protection, often meaning impoundment or channelization of a trout stream. The list could be continued, but the message should be clear. The cumulative effect has been decidedly detrimental to trout habitat.

Care must be taken and concern for streams must be shown in any development on, or alteration of,



"Fish sampling is one of the most important aspects of the entire inventory."

watershed or flood plain. There has been a growing awareness among anglers and professionals in conservation agencies that what's good for fish is also good for people. The quality environment necessary to sustain trout is a direct relationship to the quality of human environment. If a watershed can be maintained in such a manner that streams sustain wild trout, then surely the quality of life on that watershed is, from man's viewpoint, enhanced. Section 27, Article 1, of the Pennsylvania Constitution states, in part, that, "The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and aesthetic values of the environment." The preservation and maintenance of trout streams and all

that it takes to make a good trout stream are certainly consistent with the people's rights as stated in the Pennsylvania Constitution.

For an agency to preserve, maintain and manage a resource to best advantage requires a knowledge of the extent and status of that resource. In other words, good management of a resource means knowing how much, what kind, where and what's happening to it. At first glance this would seem no problem in terms of trout streams. After all, the Pennsylvania Fish Commission has been in business since 1866 and has had trout hatcheries since 1873. With a history of 112 years of distinguished service to the people of Pennsylvania, it is a natural assumption that the Fish

Commission would have a very accurate and complete inventory of all trout waters, including such information as water quality, extent of the wild trout population, best management to provide recreation and protect the resource and general physical characteristics. While this is a natural assumption, it is a wrong assumption.

The Pennsylvania Fish Commission has never had the biological staff necessary to gather basic information on the status of our trout waters. An educated guess is that there are 10,000 miles of stream in Pennsylvania that could be considered trout streams — the best, full of wild trout; the poorest, at least suitable for inclusion in the stocking program. In years past, programs were undertaken on the basis of need; and for many years stocking fish and enforcing the law seemed adequate. As the Commission moved into biological surveys and inventories, most work was designed to meet fundamental operating needs. Stream surveys were conducted in response to specific problems or requests; that is, if we had a problem, someone went out and gathered sufficient data to resolve that specific problem. The result was the accumulation of a great deal of information in some areas (for example, where dam or highway construction or industrial discharges caused problems) while other areas were not looked at for years.

As pressures on the resource increased and fisheries management and conservation became more complex, it became evident that more knowledge of the status of our resource was essential. A commitment was made to develop the staff and programs needed to provide the information necessary to adequately protect and best manage our fisheries. In 1971 the Commission established a Fisheries Management Section within the Division of Fisheries and laid the groundwork for designation of eight fisheries management areas across the state. The area fisheries management program was initiated in 1974 and scheduled to be fully implemented by 1977. A biologist (Area Fisheries Manager) and an assistant (Fisheries Technician) are assigned responsibility for each fisheries management area. Area Fisheries Managers offices are located in

Somerset, Tionesta, Fairview, Bellefonte, Huntsdale, Sweet Valley, Bushkill and Revere. The development of the Fisheries Management Section and the Area Fisheries Manager program provided the nucleus for a coordinated response to statewide fisheries problems. One could say that instead of constantly putting out brush fires, the stage was set to develop a fire prevention plan.

Developing a statewide fisheries management plan sounds easy, but it isn't. Planning is a very popular activity, and it seems that today we have planners and plans for everything — we have city planners, regional planning authorities, state planning commissions, etc. With all these plans and planners it all seemed simple, find what format other people use for developing a plan and then adapt it to fit fisheries management. Unfortunately, it doesn't work that way. One of the requirements for planning what we want in the future is knowing what we have today. Before a plan could be developed on any phase of statewide fisheries management, we first had to gather basic information on what we have and what problems need solving. To put it more clearly, we had to know where we were before we could decide in which direction we wanted to go.

Pennsylvania has a lot of fishing, a significant resource with a substantial number of people using the resource. It was evident that gathering information on the total resource would be a long project and we weren't going to be able to solve all the problems overnight. The only logical approach was to identify distinct water areas characterized primarily by the species present — trout, bass, muskellunge, etc. — and establish separate goals for these type waters. If information collection and planning weren't concentrated on distinct areas of interest, it was apparent we could gather information for years and never have enough material to initiate plans for any single program, such as trout streams. The decision was made to concentrate initial fact gathering efforts on stocked trout waters and to gradually include all waters.

Trout waters were selected as a starting point because trout habitat is being threatened by many of man's activities. (Pennsylvania has a good wild trout resource, and we need facts

to protect and preserve that resource.) Also, the Commission is engaged in a very large and extensive trout stocking program. It is imperative that the best use, both in terms of recreation and consideration of wild trout, be made of the hatchery product. It seemed that the whole issue of trout, trout habitat and trout stocking was one where fisheries management practices are most likely to have an immediate and noticeable effect on recreation. The selection was influenced by the fact that techniques for evaluation and management of trout in the size streams generally encountered in Pennsylvania are somewhat better developed and easier to implement than those for other fishes in different habitats. In other words, we knew we had the expertise and the equipment to gather the facts; and we had the background to use the facts once we had them. Experience gained in a statewide inventory of trout habitat would be useful in providing guidance in developing the somewhat more difficult and complex inventory of our larger and more diverse lake and river fisheries for coolwater/warmwater species.

The first step in formulating a statewide trout management plan is a resource inventory. This was started in 1976 for trout waters in each of the eight fisheries management areas and is well underway. Actual survey of every inch of stream or lake would be an overwhelming job. The Commission's goal is to get accurate and useful information and still be able to finish a statewide inventory in a reasonable period of time. To accomplish this requires using information from a representative sample from each stream or lake rather than from a total survey. This has been achieved by dividing streams into "homogeneous units," that is, identifying continuous sections which are from upstream and downstream limits essentially the same. Sample sites are selected within each unit as representative of that unit. In no case would a sample consist of less than 10% of the area being considered as a "homogeneous unit." This method provides valid and reliable information.

The resource inventory of trout waters includes evaluation of social, physical, chemical and biological characteristics. Social characteristics

haven't been given much objective consideration in past fisheries management. The ongoing inventory will include land and water ownership, population density of the area nearest the fishery, accessibility, parking and (where applicable) boat launching facilities as "social" characteristics. Ownership is important because land in public ownership can be managed for high use with no danger of posting, the number of owners involved is of interest because it is obviously easier to deal with one landowner than with fifty. Population density is determined for the nearest municipality as an indication of man's activity and potential activity in the area. Accessibility has a major influence on a fishery in terms of access for both fishermen and stocking vehicles. Factors considered for accessibility include bridge crossings and percent of the stream or lakeshore within 100, 300 and 500 meters of a road. (This determined by measurement on a USGS topographical map.) Parking spaces within 500 meters are also considered. Parking spaces are important. If there's no place for angle to park, it limits participation in the fishery. Boat launching sites are considered for areas where angling from a boat is a factor. Angler use and success will also be evaluated later as a separate study for consideration in social factors and to evaluate effectiveness of management changes.

Physical characteristics being evaluated include length, width, gradient, composition of bottom material, condition of banks and general geology of the drainage. Bottom material is classed as clay, silt, sand, gravel, rubble, boulder or bedrock. The percentage of the bottom made up of these different categories can influence such important factors as food production and spawning success. The condition of stream banks serves as an indication of erosion and sedimentation. Bank erosion and the factors creating bank erosion lead to deterioration of trout habitat and eventually to poor fishing. Poor land management practices, such as allowing cattle to trample and cave bank, plowing too near the banks, extensive soil disturbances such as logging roads or borrow areas, and planting row crops up and down contours, are major causes of erosion and habitat



*Where is the "county line" on this stream . . . upstream? . . . downstream?
Should it (or the resource) be the basis for intelligent fishery management?*

eterioration. Good physical habitat is associated with stable stream banks covered with grasses and sedges or shaded by trees.

The chemical characteristics of water determine its suitability for survival of fish. Temperature limits the kinds of fish one finds. If water gets too warm, it won't support trout. Sophisticated and complex chemical analyses are not necessary for the purposes of the statewide resource inventory. The major emphasis is on suitability as trout habitat. Factors being considered include pH (a value of 7.0 is neutral, most good trout streams are between 6.5 and 8.5), total alkalinity (a general indication of fertility or productivity), total hardness (an indication of total dissolved minerals), specific conductance (related to hardness and the water's ability to conduct electricity) and occasionally dissolved oxygen (sewage and other organic substances tend to lower dissolved oxygen below what would be expected in a "clean" situation).

A great share of the emphasis in the inventory is placed on evaluation of biological characteristics of a fishery. On streams an assessment is made of

the aquatic insects and other invertebrates present. The kinds and numbers of invertebrates found provide an indication of long-term water quality. An abundance of stone flies and mayflies is a fairly good indicator of conditions suitable for trout. When only a few kinds of pollution or temperature tolerant invertebrates are found, leeches for example, poor water quality may be suspected despite the fact that conditions seem acceptable at the time of survey.

Fish sampling is one of the most important aspects of the entire inventory. Several different techniques are used depending on the size and chemical characteristics of the water. Electrofishing, or "shocking," is the most commonly used method. In small headwater streams which tend to be poor conductors of electricity, sampling is conducted with a high voltage alternating current (AC) generator mounted on a backpack. Fish are stunned by the alternating current and have to be quickly netted before they drift with the current, recover and escape. On larger streams with higher conductivity, a direct current (DC) generator, mounted in a small boat, is towed be-

hind the biologists doing the electrofishing. With direct current, fish are attracted to and held in the electrical field, they are not stunned. This is an advantage in deep water or areas of dense vegetation or undercut banks because fish actually move out of cover toward the electrofishers.

Population estimates are made for trout. All trout captured are marked, measured, scales taken from a sample of each size group and released. A second sample is taken from the same area 24 hours (or more) later. The population is calculated by using a mathematical formula and comparing the ratio of marked and unmarked fish captured in the second sample. This technique, known as a Petersen type population estimate, is widely used and provides reliable and relatively accurate estimates of fish populations.

All the information collected during the inventory of the trout resource is compiled on forms which are designed to fit a computer program format. So much information is accumulated that processing and analyzing it would take many men a very long time. Fortunately, computers — those marvels of the electronic age — can sort information and do repetitive operations in an amazingly short time. (I know this confidence in computers may be challenged by those who have had a simple bill or magazine subscription hopelessly loused up by a computer; but, in theory at least, we have to have faith that if correctly programmed the computer will do precisely and quickly all that it is asked.) The computer can, and should, organize the fishery resource into classes or categories based on similarities. Ultimately, this should provide a classification which would permit similar management of similar resources regardless of where the stream or lake is located. Such a classification could also be incorporated into the framework of existing water quality criteria and designations established by the Department of Environmental Resources. This would provide a strong factual basis for the protection and preservation of all trout waters, including high quality situations with substantial populations of wild trout.

One Fish Commission program which should benefit from the inventory of Commonwealth trout waters is

the statewide allocation of hatchery trout. The present system for allocating catchable trout is linked to county quotas. The number of fish assigned is based on factors in a county and has little to do with the resource. Each county quota is based on three factors within the county: license sales, public land and water, and population. This system is superior to any previous allocation method and works rather well if one considers only the recreational experience provided by hatchery trout. The weaknesses in the system are that it provides no consideration of biological or social factors associated with an individual lake or stream, and everything is linked to a county rather than to a fishery or even a watershed.

Under the present stocking formula, a stream with a superb wild trout population may be managed much the same as a stream with a poor or nonexistent wild trout population. Both would be considered "stocked" or "approved" trout waters with no special recognition given to the difference in quality of habitat. The stocking rates would be based on the county quota, number of waters covered by the county quota, surface acreage and a best guess of angling pressure relative to other waters in the county.

The problems involved in basing stockings on a county basis are many. Perhaps the best example of a weakness can be seen when a stocked stream flows through more than one county. A stream which crosses a county line may, under the present allocation system, be stocked at a strikingly different rate in the two counties. This happens because county quotas differ, not because the stream quality or fishing pressure changes at the county line. Without an adequate base of information on individual trout waters, it is extremely difficult to build enough flexibility into a statewide stocking program to deal with such situations. As long as the county, and not the watershed, is the basic management or stocking unit, it will never be possible to handle such situations.

Information provided by a statewide inventory of trout waters should be extremely useful as a basis for development of a resource/resource-user oriented trout stocking policy. Such a policy would provide

the flexibility necessary to respond to individual or unique situations. Each class or category of water areas could be managed according to biological, physical-chemical and social characteristics rather than by the county in which they are located. Ideally, the county line would cease to be a factor in stocking decisions.

The use of classifications, based on information collected through inventory, as the primary factor in management could result in a vastly improved system for managing trout. Not only would the county quota system of stocking be replaced by a system which recognizes water areas and watersheds as the management unit for stocking, but appropriate consideration would also be given to management of wild trout. Management through resource classification paves the way for management with stocking and with no stocking and to an informed and appropriate application of special regulations such as FLY-FISHING-ONLY or FISH-FOR-FUN.

The resource classification approach to fisheries management seems to hold promise for all users of the trout fishery, the "native" brook trout angler, the fly fishing, wild trout "purist," the catchable trout specialist and the general recreational fisherman who occasionally fishes for trout. Ultimately, when an inventory of trout and coolwater/warmwater fisheries has been finished, the benefits of resource classification based management could be extended to all Pennsylvania anglers.

Implementation of a resource classification approach to trout management will not be easy. The first obstacle, accumulation of enough information to provide a basis to begin classification, has been substantially reduced. The inventory of stocked trout waters which began in 1976 is approximately 22% complete. By mid-1978, with the help of the computer, we should be able to see how classification might look. By 1980 a complete initial inventory of our stocked trout waters should be available. The big obstacle will be social — getting people to understand and accept change. Most of the resistance will probably be generated by a relative minority of anglers who are "locked into" the present stocking system or who benefit from some of the inherent

inequities in stocking on a county quota basis. It is hoped that support for a resource classification approach to trout management — indeed all fishery management in Pennsylvania — will come from all factions of the angling public, because everyone stands to benefit from intelligent, objective application of facts to the management of our fisheries.

By now one thing should be clear: the inventory and classification of our fishery resource is not an end in itself. For classification to mean anything we will have to use the information in a constructive way, and that probably means changing a lot of things to which people have become accustomed. No doubt the changes will fall far short of the expectations of the extremists who feel no trout should be stocked and every trout stream should be FLY-FISHING-ONLY. I seem a sure thing that the guys at the other end of the spectrum, the true followers who memorize stocking schedules, feel a limit of trout is the inalienable right and wouldn't dream of fishing anywhere that wasn't recently stocked — will be spectacularly and vociferously hostile if stocking in "their" stream is changed.

No system will ever satisfy everyone, but management through resource classification should be satisfactory to the vast majority of anglers; and much more importantly, will be the best possible system in terms of conserving and protecting our fishery resource. Resource inventory and classification has been long overdue in Pennsylvania. For the first time we will have an opportunity to develop a statewide fisheries management program based on both social and biological facts. We are on the threshold of an entirely fresh approach to managing our fisheries and protecting our resource. The application of fishery management through resource classification will be challenging. It's new to us and we'll probably make some mistakes, we'll probably have to adjust the program as it develops, but the prospects are exciting.

All of us who are actively involved in management of Pennsylvania's fisheries are enthusiastic about the potential of this new approach. As the program builds and develops, it is our sincere hope that the angling public will share this enthusiasm.



Old-timers appreciate the tempo of springtime sucker fishing excursions. The day astream offers relief from "cabin fever."

*Right up to trout season . . . maybe beyond,
the sucker provides a pleasant diversion*

SUCKER NOSTALGIA

by Thad Bukowski

Buds are making their first efforts to push through dead leaf undergrowth when I get the urge to visit the sucker streams. I have almost forgotten how many years ago it was that I was introduced to this bait can, sinker and worm affair but I have since angled for many more sophisticated fish. Yet, suckers are "soul food" once they get under your skin and that restless feeling to head for a favorite sucker stream returns gnawingly every year.

I get the urge to climb that high hill at least one more time as snows abate and look down at the old railroad track below. Farther on, big boulders guard the shore where the suckers gather. There is a quiet movement of water in the long mill dam. Folks

hereabouts call it Volant Mills and movement is afoot to restore the historic area. I hope it's done before the old dam bursts for it holds back a mile or so of the Neshannock Creek and some of my favorite sucker spots.

I miss the cheery wave of the locomotive engineer who once passed with a cargo of coal now that the railroad engines are gone. The squeak of the rail under tons of coal in the rumbling gondolas is no longer a familiar sound, nor is the ever-present caboose as it disappeared last around the bend behind billows of locomotive steam.

The track is still there right above the stream and blackberry bush still catches my legs while I step along weathered railroad ties to my sucker spot.

I pause, reflecting on whether the suckers are at the big rocks halfway down the mill dam, at the sunken log midstream (which takes so many snagged hooks!), or at the bend of the creek farther up where the riffle ends and the pool begins.

Years ago one did not ponder which spot he would choose as the good ones were always taken; you simply tried to fit yourself in along the shore where space permitted. But sucker fishing has faded from the scene for many.

The big oak trees still guard the hillsides at this point and sway in the wind with a few maples, sycamores and sassafras scattered nearby. Once I looked up through the branching canopy to see a V-shaped skein of spring geese making their flight back

from their southern climes and the sight is still indelible.

Crows are usually raucous in this valley . . . staking out spring territories. I prefer watching the flitting chickadee which hovers within arm's length, the colorful cardinal which sings high in the trees calling for a spring mate, or even the bluejay who squawks violently at me, an obvious intruder.

Perhaps this emerging spring is what sucker season is all about for at every turn life stirs anew, and it is sad sucker fishing is stopped once we get sophisticated ideas and think only in terms of catching other fish, espe-

cially the gamefish such as trout, bass and walleye. Catching suckers is second to being overwhelmed by the budding season each year.

It brings to mind that a good number of years ago before the Kinzua Dam became a reality, a half dozen of us were housed in a cozy cottage on Sugar Creek, between the towns of Kinzua and Bradford. We were awaiting the trout opener and being with the other younger folk I was as eager as they to ply the waters for squaretails. But suckers were to save the day.

"I think we'll go to the ash pile on the big river for suckers," finally

spoke out one of the two old-timers with the group. I was more than a bit surprised at this comment since everyone who had spoken so far appeared so high-strung for trout.

But the next morning unfolded with bitter cold and snow alternating with sparks of sunshine. The long periods of the gray-laden day chilled us completely and the trout opener was a bust. I managed two mediocre-sized trout while "freeze-wading" the creek. My other young companions fared as badly in the Sugar Creek venture.

But it was an ideal day for sucker and Duke Downing and his sidekick Vic came back with a heavy stringer. That evening our camp supper would have been mighty sparse had it not been for the suckers in the frying pan. I remember that they tasted better than any I had ever eaten.

"We had a roaring fire at the river and we sure were cozy," Duke drawled with evident self-satisfaction after the fish were polished off by the hungry crew.

The incident also recalled earlier sucker fishing outings along the French Creek near the big Carleton Hole and at Cochran for big rears and buffalos. Every sucker fishing jaunt was so enjoyable because it was filled with fishing tales and the beauty of spring around us. It was in the sucker season while sitting quietly along the bank that I saw close-ups of everything including a working beaver to patrolling turkey vultures high above me.

Sucker fishing is never complete without a big fire along the shore which attracts a half-dozen anglers who string out their rods on V-shape prongs nearby. It is no problem to watch the rods from the fire so tall tales spread while one warms the backside or cold fingers. In the middle of some usually harrowing tale an angler occasionally gallops for his rod when the tip begins to wiggle. The sucker barely moves the rod tip when he is after the worm and a lumbering angler can usually get there in time.

More than once the fisherman ended with a pratfall or some other amusing misadventure to the howling chorus and false cheers of the crowd. Sometimes his big fish turns out to be a small shiner or chub, or even a rust-colored crawdad, gnawing at his bait. On other occasions, his streaking



Scenic spots, like milldams and old covered bridges, sometimes offer the best in sucker habitat and, naturally, angler enjoyment.

Youngsters can get a headstart unravelling the secrets of nature when taken along on a springtime sucker fishing excursion.



allop may suddenly end with a slide and a sprawl like no sandlot umpire ever envisioned at home plate on a wet day.

There is always plenty of driftwood to gather and break across the knees or the fire. The snap of the wood and crackle of the fire hold certain expectations. A "hearth log" is usually ragged as the backbone for the meeky blaze and a compulsion demands each angler to forage for his complement of firewood. Potatoes are baked in the ashes . . . bacon or side pork, deer steaks, or even sausage sizes more than once as it is impaled on green willow or sassafras stick and

extended over the hot coals.

Sucker fishing is often an all-day angling affair but the fish usually bite best when the waning light disappears and dusk creeps in. Then the angler has to hold the line tenderly to judge when the fish gives it a light jerk. Many a stringer is filled at this time with two fish on at a time quite often and the light of the fire is needed to unhook fish and untangle lines. In the old days, a wick lantern was part of the complement of this night fishing but nowadays they are rare.

Sucker fishing is almost ritualistically simple angling. One needs, at most, two rods; and, almost any kind

of rig will do, with spinning or bait-casting preferable. Lines can be six- or eight-pound-test monofilament but some old-timers still prefer a braided line of about 21-pound-test because they say it records the characteristic nibble made by the sucker better than any other.

Hooks are called "fly" and can be anything from No. 8 to 14 in the trout fisherman's fly-tying tackle. Don't overlook the fact that the smaller sizes may be needed to hook the fish as I learned on one occasion when I changed to tiny 14's to catch some pesky chubs only to be shocked with four-pound red tails which I couldn't hook on the bigger barbs.

Sinkers of $\frac{1}{2}$ to one, or even two ounces are also a necessity depending on speed of current and are terminal on the line. Above these, two, or even three hooks are tied, snelled fashion, for the angleworm which is universal bait. Extra worms may be coddled to grow fat in leaf mold or even cut up newspaper, or buss bedding, in moist boxes in the cellar to last the season. Styrofoam boxes work well.

The smaller streams usually provide what anglers call the "black sucker" and this is the tastiest, perhaps because it is less boney. The bigger red tail is found in the bigger waters and both are located in stretches of slack water in almost any Commonwealth stream.

During the summer and late fall suckers are mightily good bait for musky fishing and almost inedible; but, in March and April the cold water makes them as tasty as any fish and one of the few which is on a feeding binge because it is on its spawning run. Sometimes a good pool is black on the bottom with huge schools scattering when the angler throws in his line, then rearranging themselves to feed again.

Milldams which still are commonly seen in the Commonwealth are good spots for sucker angling and one can hardly find a more picturesque spot at which to spend some moments of contentment.

It's the old-timer who really appreciates sucker fishing . . . sitting on a bank listening to the wind, the birds and the murmuring water. The youngfry they occasionally bring along will get a great start at unravelling the simple secrets of nature.



Kokanee salmon do more surface feeding on dull days but they can be taken while fishing deep on the brightest days.

KOKANEE . . .

the tiny tackle teasers of

Upper Woods Pond

by Gerald Almy

It was brutal weather for fly fishing. I pondered my sanity for heading north during the whimsical month of April as the pickup rolled through the hills of northeastern Pennsylvania. I'd been "driven" from the Beaverkill River in New York, where I'd hoped to find Hendricksons hatching but, instead, had found snow and temperatures shuddering in the low 40's at midday. But, what better way to spend the time than driving around in a heated vehicle looking over new waters? One spot in particular that I wanted to see was Pennsylvania's

only kokanee salmon fishery.

A dreary mixture of fine, misty rain and sporadic large snowflakes pelted the windshield, lending a sodden, gloomy aura to the normally exquisite hill country as I pulled into the Fish Commission parking lot at Upper Woods Pond in Wayne County. Incredibly, there were several boats out on the lake in this miserable weather and a shore fisherman was eagerly probing the water with spinning gear.

As I chatted with the shore angler (with one nice rainbow trout in an hour's fishing) a swirl out in the lake

caught my eye. Then, another, and soon the lake was dotted with rising fish.

"Are those trout?" I queried anxiously, "... or minnows and sunfish?"

"Trout or salmon," came the heartening reply.

That was all I needed. Snow and bitter northeast winds notwithstanding, I hastily unloaded my cartop johnboat and eased out to the working fish with the electric motor.

With all those fish popping up over the lake like giant raindrops dimpling the surface, you'd think it might be a cinch to connect. Not so.

Dry fly fishing on a lake is a whole different ball game from the stream fishing I was accustomed to. It's not a simple matter of casting your offering above the fish and letting the current carry the fly over him.

Fish feeding on top in a lake are almost always cruising fish, rising sporadically when they see an insect that tempts them. Their paths are erratic but to get a hit you have to try as best you can to predict their course of travel and put your fly ahead of the fish's last rise.

Eventually, after an hour or so o

fruitless casting, I began to get the knack of the technique and drew some takes from fish which later proved to be kokanee salmon. But a kokanee *strike* doesn't mean a kokanee *in the boat*, as I quickly discovered. The kokanee has a peculiar way of taking a fly. They usually leap over the fly and "spear" it as they come back down to the water!

Needless to say, it's difficult to control instincts schooled to strike the moment a rise appears. Yet doing this ensures that you'll have ripped the fly away before the fish comes down and grabs it with his mouth!

By the time I figured all this out, I was thoroughly frozen; but, I did manage to latch onto a pair of the silverside battlers on a tiny caddis dry fly. A chance encounter with another fly fisherman on the lake, who had trolled for a husky rainbow and a pair of kokanees with wet Black Gnat flies, revealed the odd fact that I was actually *lucky* to encounter such miserable weather.

"Fish won't rise when it's sunny and bright out. It's nasty out today; but, the worse the weather, the better these potlickers will take a fly." (Fortune comes wrapped in strange packages, it seems.) "Oh, you may find a few salmon working the top in the early morning and evening on nice days. But most of them stay deep when the sun's bright. I can tell when the fishing's going to be good when my arthritic knee starts to stiffen. Then I load up my gear and head for the lake!"

Anglers willing to use spinning gear and fish deep need not be worried about this fine gamefish's predilection for crummy weather, however. Kokanees can be taken deep right through the brightest of sunshine-filled days all summer long. The technique used is not easy, though it may appear so until you actually get out and try it. The method consists of chumming with corn and fishing live red worms. But there are some important strategies involved. Before going into the details of this fishing method, a brief profile of the kokanee and look at the Upper Woods fishery seems in order.

The kokanee salmon of Upper Woods Pond offer a unique fishing opportunity for Keystone anglers. The 75 acre lake is the only body of water in the state that contains this species,

scientifically known as *Oncorhynchus nerka kennerlyi*. The kokanee is basically a landlocked, dwarfed form of the anadromous sockeye salmon. Common names for the silvery-purple gamester include silver trout, blueback, red salmon, silversides, and yank. The fish is native to northwestern U.S. and Canada, and in Japan the kokanee is found in Lake Akan in northern Hokkaido. The fish have been planted successfully in many states in recent years, including New York, Nevada, Wyoming, and Vermont, among others.

Pennsylvania's efforts at establishing a kokanee salmon fishery began in 1958, after a thorough study of the data on kokanee programs in other states and careful weighing of the pros and cons of the fish. The only really serious drawback anticipated (besides the possibility that the fish would not survive, of course) was the difficulty anglers might experience in catching them!

A total of ten bodies of water in Pennsylvania were stocked, including four natural lakes and six small mountain reservoirs, with either fry or fingerling salmon. Success was achieved in only one of these lakes — Upper Woods Pond. A picturesque Pocono area lake located at an elevation of 1498 feet, it has a maximum depth of 75 feet and an overall average depth of 35 feet. The major factor which makes Upper Woods Pond suitable for the salmon, according to Robert Hesser, Chief of the Fisheries Management Section of the Fish Commission, is "deep, cold, well-oxygenated water."

On March 10, 1959, 160,000 kokanee fry $\frac{3}{4}$ -inch long were stocked in Upper Woods Pond. Since then, the salmon have been stocked virtually every year, though numbers have varied greatly according to the availability of fish.

Originally it was thought that the kokanees would not be able to spawn successfully in Upper Woods Pond. But to the surprise of Commission biologists, over 50% of the fish captured in the 1975 fall spawning run had no fin clip. "This would indicate that significant natural reproduction is occurring despite the relatively poor spawning habitat in the lake," according to Mr. Hesser.

In an effort to determine whether the population can be maintained by

natural spawning, the Commission has ceased plantings of salmon. The last stocking occurred in 1974 when 3,000 fingerlings were released. Fish will not be stocked for one more year. Since kokanees die after spawning at the age of three or four, if a healthy population of fish remains, natural spawning will have been proven capable of maintaining the fishery.

The reservations biologists had that the salmon would be difficult for anglers to catch was confirmed at the outset. Since the fish's diet consists almost entirely of zooplankton, primarily crustaceans such as *cyclops*, *daphnia* and *diaptomus*, imitating the food of the fish (or using natural bait foods) wasn't practical.

But soon a few pioneering anglers began to catch the salmon. Among those who were able to fool the fish consistently were some who claimed to have taken vast numbers of the fish — as many as 2,000 in a summer. Robert Hesser notes that "this led to a strong movement on the part of local interests that some protection should be given. This is how the 25-fish limit eventually became established."

By outward appearance this may still seem a rather liberal creel limit. But the fish are small, averaging 7-11 inches, and seem able to withstand the fishing pressure without harm. The salmon are certainly no cinch to catch, in spite of the regular success some experts enjoy. Successful kokanee anglers have refined and developed specialized tactics that take a bit of time to learn and hone to perfection.

There are two common methods used to catch kokanees on Upper Woods Pond: fly fishing and bait fishing. The fly fishing opportunities can be further divided into two types: trolling and casting. But before droves of fly fisheries descend on the Pond, it's wise to keep the time factor in mind. Cold weather is virtually the only sure time to take the kokanees consistently on the surface. During the early cold months, from the season opener through May, and occasionally again in the fall, the fish cruise the surface, feeding on small insects and sometimes seemingly just leaping for the fun of it, apparently.

On dark, cloudy days, even during a drizzle or light snow, the fish are most active near the surface. So if



The kokanee salmon is a tiny fish . . . comparatively speaking.

you're a fly fisherman, it's best to break out the down clothing and hit the lake when the weather is at its worst. You won't be alone . . . Upper Woods regulars know the predilection of these gamesters for nasty weather and will be out in full force seeking the scrappy silversides.

Sometimes fish rise on clear days but usually just in the early morning and late evening. Many of the rising fish will be rainbows, and some may even be tiny bluegills and golden shiners, which, unfortunately, appeared in the pond after it had been cleaned out prior to stocking of cold water fish in the late 50's. But many of the risers will be kokanees dimpling the surface.

The overwhelming favorite fly among trollers is the wet Black Gnat. A crisscrossing coverage of the middle of the lake with electric motor or oars is the preferred trolling method since gas outboards are prohibited.

Casting flies is a much tougher way to catch kokanees but when you do connect it's a truly satisfying experience. Small dry and wet flies are both used. In the spring, I drew

numerous strikes with a #20 Ginger Caddis fly and hackle midges in #18's and 24's.

Stream fly fishermen will find the cruising fish a tough quarry. The most productive method I found for drawing strikes was to keep some line on the water and some coiled loosely in my left hand, ready to shoot. When I saw a rise I'd better deliver the fly within a foot or so of the swirl as quickly as possible. By twitching the fly as soon as it touched down, a strike could often be drawn from the roaming salmon. Just be sure to let the fish actually get the fly in its mouth on the way down before you tighten up on him. When you do connect you'll find the salmon frisky fighters with tender mouths. Getting them to the boat is no mean task!

If all this makes you want to stick with bait, be assured the worming technique is no pushover either. It is, however, the most popular method of taking the fish and produces consistently all summer long. June, July, and August were traditionally the "hot" months to catch salmon with worms. But Waterways Pat-

rolman Michael Badner said that "for the past several years these fish started hitting early in the season."

The basics of this method involve chumming with canned corn to attract the fish to the chosen area and then fishing with small red worms at various depths off the bottom. Contrary to the belief of many novices, the fish are usually not found right on the bottom.

Once the chum has been tossed overboard, light spinning rigs are used to flip out worm-baited hooks. Light lead weights are employed, with either a split shot or bottom sinker of $\frac{1}{4}$ -ounce typical. Small hooks, size #10 or #12, with short shanks are best. The smaller the worm, the better. Some use only pieces of worm. Once the bait hits bottom, the angler takes one or two turns on the reel handle and waits with the tip of his rod virtually touching the water. At the slightest nibble the hook is set since the kokanees seem more interested in playing with the worm than eating it and will rarely swallow the bait, no matter how long you give them. If no bites occur after a short time, the reel handle is turned once or twice more. Then you wait again. And so on, all the way to the surface. Some anglers like to jiggle the worm slightly to help attract bites.

Of course you don't always find the fish at the first spot. After an hour, if no bites occur, a new spot is tried. There really doesn't seem to be any one hot spot on the lake, since the fish cruise quite a bit. I've seen the salmon taken virtually everywhere in the lake at one time or another.

Don't be discouraged if you miss a lot of fish. Generally only one fish is caught for every five or six kokanee bites!

When you do catch a few of these exquisite little salmon, treat them with tender loving care. The flesh, bright orangish-pink in color, is a gourmet's delight, rich in oils and fats, and delectable on the table. The salmon can be smoked, pan fried, or baked. Just thinking about the simple appetizing treatment one Upper Woods regular recommends gives me the itch to head for the Pond: "... spread them out on a baking sheet, brush on melted butter, sprinkle a dash of lemon juice, salt and pepper, and bake in a moderate oven . . . delicious!"



FLY FISHING — The Trials & Tribulations of a Novice

by Debbie Monikowski

When I first met my husband, he told me he was a fly fisherman. Not really knowing anything about fishing, I had the impression that all a person had to do to catch a trout was to throw the line into the water, fall asleep on the bank, then wait for the fish to wake you. While this is a slight exaggeration, it isn't too far from what I had thought. He said, "Oh, is that so? Well, why don't you go fishing with me?" I accepted the challenge. Fly fishing, I found, was not only a challenge to the novice but to the experienced angler as well.

I was lucky to have my husband as an instructor for my first fishing trip. He was an angel, that is, an angel fallen from Heaven! He marched me to the middle of First Fork of Sinnemahoning Creek, handed me an antiquated fly rod, and said, "Go to it." Needless to say, all I caught that day was a severe sunburn on my nose that made me resemble W. C. Fields for two weeks! But, I was undaunted . . . I swallowed my pride and gave it another try the following year. It was my father-in-law that took the time to "show me the way." This led to my first real catch, other than leaves,

etc., an 11-inch rainbow. I was thrilled!

The only thing hooked that day wasn't the fish. I was hooked on the exhilarating thrill of catching that fish . . . of being surrounded by some of the most beautiful country God has created. My husband was also impressed and decided to take me seriously. He began to take the time to explain the do's and don't's of fly fishing. I began to realize the fisherman has everything against him. When he fly fishes, he's using something artificial to represent something real: a fly. The angler must determine which fly to use that day by the temperature, time of the year and by actually looking for the real fly coming off the water. If he makes the wrong choice, his chances of catching fish are greatly diminished — so it is said. The choice is not between one or two, but many varieties of flies; and, the very particular appetite of the fish makes it a rough decision.

Additional variables, such as mastery of the wispy fly rod, depth of the water and its clearness also come into play. The level at which the trout are feeding determines whether to use

a wet or dry fly. The dry fly is coated with a substance that makes it float. The wet fly is the dry fly counterpart that gently floats beneath the water. I remember in the beginning when my husband spoke of fly fishing, I thought he was talking about houseflies. I soon found out differently. The flies really resemble a sort of "furry" mosquito.

One of the greatest offenses I committed through my own ineptness, was an inaccurate or too heavy cast. When the fly hits the water it should float down gently without a ripple. A trout can tell the difference between a "natural float" and a "crash landing." The trick to the delivery is mastery of the rod with a steady, smooth wrist action. Inaccurate casts have been known to frighten the fish and send them hiding for the remainder of the day. Writing from my experience as a novice angler who has succeeded in tangling the line, submerging my hip boots, and making my fly hit the water like a kamikazi pilot, I can say it's still worth it. When you finally feel that fish on the end of your line and you've carefully brought him in, it's a wonderful experience. It's a sensation of pride, satisfaction, and true appreciation for the beautiful, the elusive trout.



Fly Fishermen Are Made . . . Not Born

by S. R. Slaymaker II

Among many misconceptions about fly fishing is the common notion that it is a tough pastime to master. Some take it as gospel that a successful fly angler must be possessed of the physical dexterity of a gymnast and the entomological learning of a biologist. Many potential converts to fly fishing, then, are "scared away." More's the pity that they never discover that fly fishing is as easy to learn as it is enjoyable. My contention is borne out by an interesting "case study" which I made several years ago.

I write this story with some trepidation because central to it was my book *Simplified Fly Fishing* (Harper & Row). A writer who trumpets the virtues of his own book comes across, at best, as a braggart; at worst, very mercenary. So I hasten to note that I'm making no claims about this thin volume "belonging to the ages," so far as angling literature is concerned. Put simply, my book was not meant to compete for literary awards or to garner much in the way of monetary returns. It was written to simplify fly fishing for beginners. Over the years I've mentioned many angling books in magazine pieces by way of substantiating points of view or reinforcing conclusions. So, since I can't very well tell the following story without reference to *Simplified Fly Fishing*, I'm taking the liberty of doing so, unbecomingly though it may seem.

Five years ago Paul Allison of Gap, Pa. was a 23-year-old, dedicated plug fisherman. Paul occasionally fished my farm pond. One September evening in 1969 after leaving the pond, he stopped at the house with a copy of my book for me to sign. I expressed pleasure about his desire to take up fly fishing and offered to help him get started with my tackle.

"No thanks," Paul said, "How about if I follow your book to the letter; from the buying of equipment to casting on farm ponds for bluegills — the whole bit." He went on to say that he would like to be my "first guinea pig."

I was greatly pleased at the prospect of a case study, as it were, evolving from the book. I promised Paul that he could have the pond to himself and that I would not go near it when he was learning.

Paul's first experience with trout had occurred in July, 1969, when he was visiting a friend who had a cabin near Slate Run in Lycoming County. He borrowed a fly rod, line, leader and some flies, and tried his hand on the "Fly-Fishing-Only" stretch. Nothing was caught. In August he went to Slate Run again with his friend's tackle and caught two brook trout; one of four inches and another of eight. Then he vowed to forsake trout for farm pond bluegills until he learned casting basics. So he brought a 7½-foot fiberglass fly rod, a single action fly reel, a size 10 level line, and some 7½-foot leader tapered to 3x; all as per the book. I gave him some flies but can no longer remember the patterns. They were probably badly chewed-up trout flies which I've always used for bluegills since these little scrappers will take literally any small fly and "frazzled" ones are usually the most effective.

After his first fly casting session on the pond, Paul was ecstatic about catching a couple of bluegills. He didn't know (and won't until he reads this) that I watched some of his first "lessons" from the living room window, through field glasses. He seemed to be having trouble with his back cast. The cause of his difficulty was an electric wire girdling the pond,

about fifteen feet behind him. When Paul stopped at the house I told him — as if the thought had just that minute occurred to me — that we ought to remove some of the wire when he fished.

"Oh no," said Paul, "that darned wire is teaching me to keep my back cast up in the air where it should be and not on the ground back of me."

As the book suggests, Paul graduated himself to a "pay-to-fish" trout pond so as to build confidence in his ability to catch trout on flies. After one outing he felt ready to fish a proper trout stream. So, after buying boots and a fishing vest, he set out again for Slate Run on the opening day of the 1970 season. Earlier he had discovered some wet flies which he had bought for no good reason several years before while serving with the Marines in Okinawa.

"They were terrible Japanese flies," Paul said. "But I'll never forget tying on a #12 yellow nymph . . . that was the fly which caught my first decent trout in a stream. Six of them. Not a good score," he laughed, "but I sure was proud!"

Practically all of his free time during the '70 season was spent on Slate Run and, as his scores increased, Paul knew that he was "hooked for life" on fly fishing. During the following winter he carefully restudied the stream maps in the book to become a more effective reader of water. And, using the recommended reading list, he began to collect an angling library. Determined to learn more about insect life and how to tie his own flies, Paul bought two books which he says were very helpful, *Tying the Wet Fly*, by James Leisenring (Dodd and Mead) and Art Flick's *Streamside Guide* (Crown). While I tied with Paul on several occasions when he was beginning, he pretty much taught himself. He concentrated on the Flick patterns.

One evening during April, 1971,

Paul burst into our kitchen while our family was having dinner. After apologizing for the interruption he said that he had just come from Slate Run and "had to see me at once to make a presentation." He whipped out a match box and handed it to me. Inside was a Hendrickson nymph. It was the first of his home ties to score, and he wanted me to have it.

Through practice and reading Paul Allison became as polished a fly tier as he is a successful fly fisherman; facts to which I can attest with a red face. At the time — in the early 1970's — the short, ultralight midge fly rod was the rage. The late Arnold Ginrich ordered a five-and-a-half-footer for me from Paul Young's shop in Michigan. I adored the rod; principally because its light weight magnified the fighting power of hooked trout — not to mention that it was easy to handle on small, heavily wooded streams.

During an early season outing with Paul Allison on Slate Run the water was high and cold. Fly hatches were very sparse. Plainly, conditions called for nymphs or streamers. We chose nymphs. Paul's were weighted and mine were not. He did very well. I did poorly. I told him that even a small amount of lead in a fly rendered my little wand difficult to handle, and that there were very few occasions when I found it necessary to revert to weighted flies. When water was high, I told him, I sought out shallow, fishy-looking pockets which did not require lead. I said that I was bound to come across trout sooner or later. I did so on this occasion. But mostly later and the fish were small!

Paul, to the contrary, with his longer and heavier rod fished weighted nymphs with ease. He took more and bigger fish because he was able to get his well-leaded March Brown nymph into deeper stretches where most of the larger fish were lying.

This fact was graphically illustrated when we reached a boulder-strewn glen through which water cascaded into a large, elbow-shaped pool. I cast to the tail of the stretch and caught a small brook trout. My following deliveries to the pool's center and its head proved futile for the simple reason that the rain-swollen flow was so swift as to return the nymph to the pickup point before it could sink even an inch

or two.

I signalled Paul to take over. He passed up the tail and the center and dropped his nymph into the boil of white water at the head of the stretch. The line's drift back, slower than mine, indicated clearly that the "leaded" March Brown was plumbing the depths. As it swept into the deep water where the stream angled to our left, Paul's rod pulsated sharply. Concurrent with the reel's screech a chunky brown trout bolted up and out, just a couple of feet before us. Paul yielded slack as his fish sped upstream and into the cascade where it jumped again. Pressure on the brownie precipitated a downstream run. Then came another dash up to the white water, followed by a run-back to the shallows where Paul netted him: a fifteen-inch, deep-girthed fish with brassy flanks and tangerine-colored spots.

Now I've never been an angling competitor and hold firmly to the belief that it's bad form to try to "out-fish" one's companions. Competition, it seems to me, should be between the angler and the fish. But this was a humiliating experience. I, a fly rodder for more than a quarter of a century, had been out-fished by my protege who had just started his fly fishing career!

I've recounted this vignette because it illustrates clearly how some anglers permit themselves to become mesmerized with the mystique of fly angling to the extent that they don't think rationally and, worse, confound the efforts of beginners. It's fortunate that Paul opted to learn directly from the book. Had I worked with him in the beginning, my enthusiasm for midge rods might well have worn off on him *before* he mastered the longer, easier-to-use rod. I never sally forth to a trout stream anymore without a long rod in reserve.

An ironic twist to this experience came a few years later with the writings of Leonard M. Wright, Jr. *How to Fish the Dry Fly as a Living Insect* (Dutton) and *Fly Fishing Heresies* (Winchester Press) are unquestionably among the most important fly fishing books to be published in many years. Beyond being first rate literary works, Len Wright's books have contributed to the twin lores of fly fishing technology and insect life, particularly caddis flies. Also, these

books have debunked, delightfully and inoffensively, some angling dictums which have been revered like holy writ because they were propounded by fishing greats of yesteryear and have remained unquestioned by today's writers, largely because it seemed irreverent to do so.

A prime target of Len Wright's is the midge rod. While he admits that it has its place, he demonstrated the efficiency of longer rods over the long pull, so to speak. It is to Paul Allison's credit that he anticipated midge rod fallacies before many "experts" who had to be convinced by Len Wright!

"You don't learn fishing from books," Sparse Gray Hackle (Alfred W. Miller) wrote in his Foreword to *Simplified Fly Fishing*. "You learn from fish." The Dean of American fly angling is right, of course. He might have added, too, that in the end you have to teach yourself. This is precisely what Paul Allison did. Surely, he could have learned without the book. Tackle company "how to fly-cast" booklets would have been helpful. So would lessons from friends. But the fact remains that the book helped him.

"Fly fishing has really turned my life around for the better," Paul recently told me. He even built a vacation cabin near — you guessed it — Slate Run!

For those about to start to fly fish, Paul offers the following advice in his own words: "Get a balanced outfit. Practice casting on your front lawn, then a farm pond. This is one point on which I disagree with Sam's book. He starts you off on the farm pond. I feel that your first casts should be made on a lawn. Use weighted flies when you have to. Don't loaf on a stream, keep your fly in the water as much as possible so as to show it to the maximum number of fish. Learn to 'read water.' Cover the maximum amount of water. Don't hang around one spot too long; keep moving. Concentrate as much, or more, on riffles and pocket water as you do on pools. Read as many magazines and books on fly fishing as possible, and above all, learn to tie your own flies. I've found Chauncy Lively's column in the *Angler* very helpful in supplying me with new and effective patterns. When you first catch a trout on one of your own flies, you can really call yourself 'a compleat angler.'"



Allegheny National Forest's NATIVE BROWN TROUT

by Daniel J. Smrekar

My home-tied size 10 "*Irresistible*" disappeared in a big bulge of water as a jet-black fish turned and carried it in its mouth toward a tangle of logs laying across the four-foot-wide stream. Instantly the fish was under the tangle and a swift yank gained him his freedom as the fly popped back out, even before I was able to recover the slack.

Supposition on my part was that the fish was at least a couple of inches past being a foot long and may never have seen an imitation fly before.

When I made the cast I was standing in a stream situated deep in the Allegheny National Forest which covers more than a half a million acres in four counties in northcentral Pennsylvania.

My imagination had been whetted a few weeks earlier when I had picked up a few words about there being honest-to-goodness native brown trout to be found. I just had to see for myself if the fish were really there and that was why I had ventured deep into the forest heartlands. The tree-lined

stream I was exploring was at least five or six miles from the nearest stocking point. To get there we had packed our car along an open forest timber road and had walked for an hour down a steel hillside to find the mouth of a feeder stream that entered a larger branch of Tionesta Creek headwaters. Guiding me through the remote area was District Forester Paul Bohn out of the Ridgway District Office of the National Forest Service.

Forty five minutes after the initial encounter with the first wild brown trout, I was casting the high floating *Irresistible* over perhaps the deepest pool in the stream. At the bottom of five feet of water was a submerged old pine log, and out from under it came a huge head.

The size of the fish shattered my composure and I yanked back on the six-foot fly rod before the brown trout ever got a chance to close his mouth

on the tantalizing fly. My haste registered a clean miss with the hook and the fooled old brown disappeared . . . the pool returning to absolute quiet.

In between the first nice trout and the brown I missed, I managed to hook a couple of small native brook trout in bright red coloration.

But I had come to the small stream in search of what a tipster had called "native" brown trout and I had not been disappointed. These fish were as *native* as anyone would want.

Less than 10 minutes later I was fast to a 10-inch brown that lost an intense struggle. When it came in close it was easy to see that the fish had been in the stream a long time, maybe even since birth, as reputed by a friend.

The belly and side of the trout were bright yellow and dots along the side of the fish were of the brightest red.

I released the trout. Trying to keep the fish fresh and climb back up the mountain on that rather warm day just wouldn't have worked.

During the hopping from fishing spot to fishing spot along the stream I

spooked two additional lunger browns that made V-waves as they cruised to hiding places under overhanging alder bushes. And the remote journey was heightened as Paul and I sat eating lunch under a big tree. Flittering around us the whole time was a brilliant deep woods scarlet tanager.

When Paul signaled it was time to clamor back up the mountain the call came all too quickly. As I was forced to leave the hidden native brown trout waters I had already made a mental note that the Allegheny National Forest was my insurance that there will always be good outdoor adventures left for me and within easy reach of my Jefferson County home.

However, the next trip to the secret waters is going to be different. None of the rush-in, rush-out stuff.

On my next trip I'll be taking a sleeping bag and a light tent and spend at least a couple of days exploring the remote area, for one of the beautiful things about the Allegheny National Forest is that wilderness camping is still allowed on most of its land. All that the forest managers at

the present time ask is that the public leaves the land the way they found it — serene, green and clean, back away from the roadways.

My enthusiasm for the wild little streams of the Allegheny National Forest need not be kept a secret, however, for there are lots of pools for others on more than a dozen streams with miles of seldom-fished water to choose from. Some creeks will have the browns and others just brook trout. The only real way to find out is to cast into them.

Additionally, when in the Allegheny National Forest a fisherman is never far away from the Kinzua Dam, Allegheny River, or Tionesta Creek, where large fish can be caught with far less walking involved.

I would suggest that for starters a fisherman could try streams like Wolf Creek, Coon Run, Crane Run and Martin Run (found on forestry service maps) and pick out remote stretches.

The odds of encountering another fisherman are low, but the chance of tackling a stout wild trout are far better than you might imagine.

Graphite — a perspective

by Michael E. Sajna, Jr.

Graphite, the popular term for a very stiff type of carbon fiber (no relation to pencil graphite) was first synthesized by the English Royal Aircraft Establishment in 1965 and saw its first use in fly rods in the early 1970's. Heralded by a great many at that time as the ultimate rod building material and replacement for both fiberglass and bamboo it created such a storm of confusion that it is only now becoming possible to look at it objectively and discuss its strengths and weaknesses.

To begin, let it be said now that even the casual observer recognizes that both bamboo and fiberglass have survived the onslaught of graphite and will endure for probably as long as man continues to pursue piscatorial delights. Graphite, on the other hand, will not lose any ground either and will continue its growth in popularity and acceptance as one of the three major rod building materials available today.

Performance and sensitivity are the

trademarks of a properly designed graphite rod. The nature of the raw material itself offers certain characteristics that are not present in either bamboo or fiberglass. For instance, because of its high density construction, or stiffness, graphite can recover much more swiftly from a sloppy backcast and pickup much smaller vibrations than either glass or bamboo, and thus allow a quicker response.

The engineering and advertising term "modulous" is a measure of a material's stiffness (resistance to deflection) and one that is frequently heard in reference to graphite. It is also a term that can cause a great deal of confusion in buyers' minds when one company speaks of its rods as being high-modulous while another stresses theirs as low-modulous.

Fiberglass has a modulous of between 3,000,000 to 6,000,000 pounds per square inch, bamboo 6,000,000 to 7,000,000 and graphite 12,-

000,000 to 19,000,000. So, graphite has a high-modulus rate when compared to fiberglass and bamboo, but low if compared to some other graphite used in the aerospace industry that is totally unsuitable for rods. So it could be correctly said that the graphite used in rods is low-modulous. To ease the confusion even more, let it be known that most manufacturers of name are at the moment using basically the same range of graphite in their rods.

After the modulous problem has been understood and overcome the prospective buyer of a graphite rod is faced with the problem of 100 percent graphite versus a composite of glass and graphite.

In the early days of graphite a few attempts were made to flood the market with glass rods that had just a minimal amount of graphite (\$100 a pound versus \$.87 a pound for fiberglass) in them. Without any governmental or industry controls many unwary people began to believe that any black or gray rod with "graphite" printed on it was the real thing. Although since then efforts have been made at a labeling code, enforcement is difficult and the best advice that can be given is to place your trust and

confidence in the products of a brand name manufacturer who will stand behind his product. There are few rod blank manufacturers that use 100 percent graphite. The majority usually use a small amount of glass (4 percent to 25 percent) for design purposes. Several of these rods have beautiful actions and perform quite well on the water, but for the person who wants the best it is still smart to stick to the big name manufacturers. You might pay somewhat more but at least you will be assured that you are getting the quality you want.

In buying a graphite rod the purchaser is faced with one overriding problem when he tries to test the action for the only true way to test a graphite rod is with the correct line on it and it is doubtful there are very many sporting goods outlets with an area to do that in.

Upon first flex in a store a graphite rod will appear to be too stiff. Because graphite is so light (roughly half the weight of bamboo and two-thirds that of fiberglass) there isn't enough weight in the shaft of the rod to overcome this stiffness, compounded by the fact that graphite reaches its optimum weight load over a shorter arc than either fiberglass or bamboo, and so releases its energy faster, there is no way that the true action of the rod can be tested without the weight of the correct line.

Many graphite rods recommend two different line weights that can be used. Matching the right line to the rod is no less important with graphite than with fiberglass or bamboo, for, contrary to popular belief, a graphite

rod will not accept a wider line range than either of the other two. There is some latitude, it is true, that's the reason for the two line weights given on a great many graphite rods, but to stray beyond that is to sacrifice maximum performance.

The truly greatest advantage graphite has over both fiberglass and bamboo is its sensitivity. Because of its much higher modulus in comparison to these two materials graphite is a better transmitter of vibrations and thus allows a quicker response and faster setting of the hook by just lifting the rod — a fantastic advantage for the nymph fisherman looking for those delicate underwater takes.

In direct relation to this sensitivity of graphite is its breaking strength. Fiberglass rods are often over-designed to function at only 40 percent of their breaking strength because of the rough treatment some anglers put them through. Graphite, however, which is designed to function at between 60 percent and 70 percent of its breaking strength, cannot tolerate this abuse and deserves to be treated as fine bamboo. A rod that is a delicate fishing tool should have a stress level of between 50 percent and 75 percent of its breaking point that is the greatest practical amount of sensitivity available without breakage. Glass cannot be designed to these high levels, graphite can and thus should be treated with due respect.

From a casting point of view graphite has become almost legendary. Because it releases its load faster it has a faster action and makes

timing easier and allows for a shorter stroke and tighter loop, the keys to good casting and distance. It will not, however, cure all the ills of a poor caster so if you are one do not think that it will perform a miracle upon touch, but after building a sound and correct style it will allow you to reach spots you once only dreamed of.

Another major advantage of graphite is that it will permit a longer rod to be used with a lighter line. Where once an 8½ foot or 9 foot rod using a No. 5 line was only a fantasy it is now a reality. And any experienced fly fisherman can tell you of the advantages in delicacy of presentation, ease of casting and control, efficiency in the setting of the hook and safety in keeping the fly away from your head and other obstacles on windy days.

After all the advantages of graphite have been discussed perhaps now it is time to mention the one greatest disadvantage: the cost. The raw material for graphite rods is expensive, as was mentioned earlier, and the manufacturing process more costly and demanding than for fiberglass. For these reasons a quality graphite rod will run between \$100 and \$200. And since graphite rods do not have the mass market appeal of things such as calculators which had a high price tag when they first appeared on the market it is doubtful that there will be any significant drop in price in the near future. So, if you are thinking of purchasing a graphite rod right now is probably as good a time as any. And, no matter what you pay for it, once you have tried it you will quickly come to think of it as a bargain at any price.

Bob Cranford, right, is pretty proud of his 32-inch, 8-pound northern pike but his daughter, Joanna, peering from behind, prefers to view it from a distance with some apparent misgivings! Bob caught the pike from the Shenango River Reservoir using a small Rapala plug.



FLY TYING

The Grizzly King Streamer

by Chauncy K. Lively
photos by the author



In the history of fly fishing streamers are generally considered a relatively modern development, evolving mainly during the twentieth century. However, it is known that coarse flies representing baitfish were used by the ancient Macedonians and lures made of bone and hair were fished by Eskimos and American Indians as early as the 1700's.

Theodore Gordon, with his "Bumblepuppy," should probably have credit for the first streamer designed for sport fishing but the present concept of hackle-feathered streamers was developed by a group of fly tyers in Maine. Alonzo Bacon, a guide from Grand Lake Stream, tied long chicken feathers directly to a bare hook and called his concoction the "Rooster's Regret." But his simple pattern was also the regret of many a trout, bass and landlocked salmon and it wasn't long before other fly dressers elaborated upon Bacon's theme, adding their own refinements. The now-classic design of the streamer fly is attributed to such fly tyers as Herb Welch, Bill Edson and Carrie Stevens — particularly the latter, whose flies are now considered works of art.

Our pattern for this month is a streamer fly that's a direct adaptation of the well-known Grizzly King wet fly. I don't know who authored the adaptation but it was thoughtfully conceived and the result is an effective pattern, albeit obscure, worthy of a place in the streamer fisherman's kit.

In the high and often cloudy water of early season the fly fisher finds himself dependent upon the visibility of his fly to the fish. Black is said to be especially visible in dirty water and the contrasting black and white bars in the Grizzly King Streamer's wings make the pattern a standout. Barred teal sides carry the mottled effect to the head of the fly. As in the wet fly version, the body is made of green floss and ribbed with tinsel to add a bit of flash. Short tails of red goose quill sections lend a dash of contrasting color.

Wings for the Grizzly King may be of large hackles from a rooster or hen neck; or, alternatively, they may be of saddle hackles. I personally prefer saddle hackles because of their shape but the thin center ribs in saddles sometimes present problems not inherent in the stockier neck hackles. If the streamer wings are of hackles

with extremely flexible ribs — and they become even more flexible when the fly is soaked — they sometimes flop awry during casting and become lodged under the bend of the hook. If this becomes a problem I stroke the hackles until they are even and apply a drop of lacquer or Pliobond to the very tips of the feathers. The adhesive is then worked into the feathers to insure that it penetrates the four hackle tips. This holds the feathers together in orderly fashion and the streamer loses little of its action in the water. Of course, this treatment should only be done when the fly is dry.

As with most streamers, fish the Grizzly King in short, erratic strokes, simulating the movement of small baitfish. In April water the retrieve should be slow and deliberate and each cast should be fished back to the rod. Trout are lethargic when the water is cold and a good fish will sometimes follow the fly right back to the angler before making up its mind to take. You may tie the Grizzly King as large or as small as your tastes dictate but I've found sizes #6 and #8 (long-shank) most useful for early season.

Dressing the Grizzly King Streamer:

Left — Tie in black nymph thread at bend of a long-shank hook. (Size #8 Limerick shown). Cut two narrow, matched sections (right and left) of goose quill, dyed red, and tie in as shown. Trim excess.

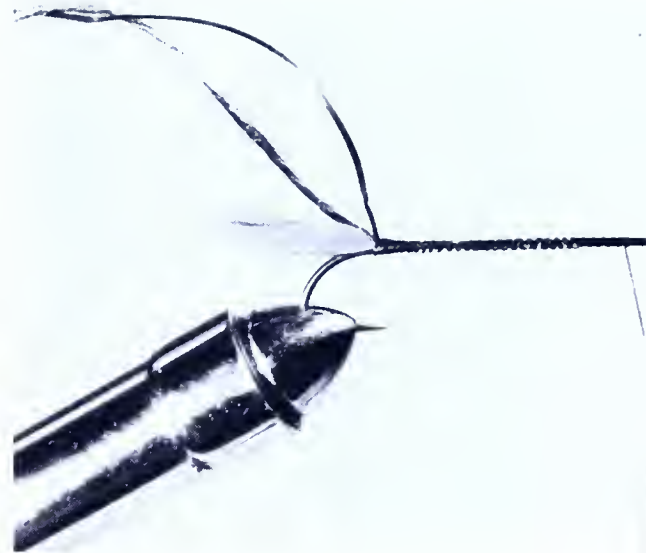
Right — Cut a strand of green, medium-heavy floss and a length of medium-wide, flat gold tinsel (plain or embossed). Tie in together at bend with long ends extending to left and short ends along shank toward eye. Wind thread evenly over short ends of floss and tinsel, forming smooth underbody, and half-hitch thread behind eye.

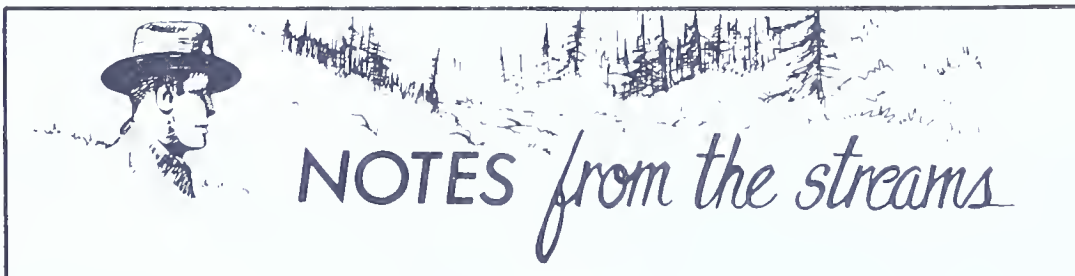
Left — Wind floss clockwise to form a rather thin, tapered body and tie off behind eye. Then wind tinsel ribbing counterclockwise over body in eight spaced turns. Tie off behind eye and trim excess of both tinsel and floss, as shown.

Right — Select four large grizzly neck or saddle hackles and match them together in two pairs. Then place the pairs together as opposites, with glossy sides outside. Measure an effective length of about twice the shank length and strip away barbules below that point. Tie in wing by stems, as shown.

Left — Strip a bunch of soft grizzle hackle barbules and tie in as throat, underneath base of wing.

Right — For sides, select two barred teal body feathers, strip away unwanted lower fibres and tie in by stems, one on each side, in position shown. Then trim away all excess materials behind eye and wind a neat, tapered head with thread. Whip finish and apply head lacquer. Opposite page — The finished Grizzly King Streamer.





HELPING HAND —

While stocking Cedar Run with the in-season trout during May 1977, I had a young man from Wellsboro riding with me and assisting with the stocking. The man, Dave Stager, told me the following story. He had assisted with the stocking of Cedar Run the previous year and the weekend following the stocking he went to Leetonia to fish the stream. Dave was in his last year of college at Mansfield State and could only get out on weekends. He worked at the desk in the Penn-Wells Hotel at night to help pay for his education. Dave is a good fisherman and he had six trout in his basket when he met an elderly gentleman fishing a hole. The man's wife was in the car watching. Dave was going to bypass the area but stopped to visit and see how the man was doing. From up on the higher bank Dave could see fish lying at the lower end of the hole. The old gentleman had no fish and, even though he had the same bait as Dave, he could not even get a strike. Dave laid his rod down and tried to help the man catch some fish. Dave spent about an hour there and the man still could not seem to get the knack of catching them. When Dave left he gave the old couple his six fish so they could have one good meal until the man had some good luck on his own. In the course of the visit Dave told the man about his coming college graduation and his working at night. About the first of June a letter came to Dave at the hotel with a check in it for his graduation present. Dave found that it paid to stop and help a fellow angler.

Raymond Hoover
Waterways Patrolman
Tioga County

TACKLE BUSTER!

Did you ever hear the story of the "big one that got away"? Jack Pierodi of Kane, Pa., had this misfortune:

He and his wife were trolling the Allegheny Reservoir and he hooked a big musky. After a long battle, he assumed the musky had played out; but, when his wife tried to assist with a net the plug became tangled in the net and the fish broke free and swam away. A couple of weeks

later Jack was trolling the same area. Again he hooked what he believes was the same musky. This time rather than take a chance with the net he stuck a gaff through its mouth. You guessed it, the leather thong on the gaff handle broke and the gaff slipped out of his hand and the musky swam away with the gaff. Jack swears it was between 55 and 60 inches long. Several weeks later Jack Allen claims he hooked the same musky and it broke his line.

Paul R. Sowers
Waterways Patrolman
Warren County

RARE SIGHTING!

Early in the afternoon on September 23, 1977, Deputy Tom Kamerzel, several fishermen and I witnessed what can be described as a very unusual phenomenon. Tom and I stopped at the boat ramp at Canal Park on the Lehigh River, where we were talking to an old-timer who was fishing worms for suckers and bullheads.

Looking into the water, we were amazed to see a legal-sized musky lying about ten feet away from the fisherman. We often see muskies in the river, but this one was only a couple of feet from shore and his nose was about an inch above the concrete ramp. When we told the fisherman about this, he promptly chucked his sinker and worm at the musky, scaring him off. I began walking the shoreline to check some other anglers nearby and noticed another musky lying about two feet off the shoreline. A little further on there was another nice musky close to the bank and this continued until I counted about six muskies in about a 150-yard stretch.

Returning to the ramp, Tom and I saw three of these beauties in one spot; then, launching the boat and checking the shoreline downstream, we spotted several more of these fish hugging the bank. Along with the muskies, we saw many nice smallmouth bass and thousands of suckers in the same area.

Thinking that a pollutant on the opposite shore might have driven the fish across the river we checked the water in that area and found no problems. Some fishermen who never saw a musky before

couldn't believe that so many legal muskies were in that one small area. We estimate that we saw about twelve fish of legal size and over, plus several smaller ones. The sighting of thousands of suckers in this area was no less amazing.

The following day the fish had dispersed and we saw no muskies and very few suckers. This unusual congregation of fish still remains a mystery.

Fred Mussel
Waterways Patrolman
Lehigh County

BRIGHT FUTURE —

In April, June, and August 1977, Fish Commission personnel introduced 125,000 striped bass/white bass fry and 41,000 striped bass/white bass fingerlings into the Susquehanna River above Conowingo Dam. The fry were little more than "two eyes and a wiggle" while the fingerlings averaged slightly more than one inch in length. Since this section of the river supports large numbers of young gizzard shad annually, we were optimistic over the potential growth of these fish. Therefore you can imagine our satisfaction when sampling efforts in September yielded 50 of these fish averaging over 8 inches in length. Pennsylvania fishermen can expect some exceptionally fine fishing for these splendid sport fish.

Richard W. Marshall
Area Fisheries Manager

BASIC TRAINING?

Waterways Patrolman Kerry Messerle in the Southeast Region, apparently qualifies a deputy candidate by making him catch chickens.

We had a hen living in the bush outside the office. After noticing she looked thin and sickly, I started feeding her cracked corn but I was worried that she would have no proper shelter for the winter. Mr. Sickles wouldn't let me adopt her as our office "mascot", so I asked Assistant Supervisor Stan Paulakovich if he and Kerry would catch her and I would put her with my parents' chickens.

Kerry had a prospective deputy here in the office taking his test. Well, Ed wasn't too good with a fish net but Kerry was as quick as a fox. He chased her across the bank of the lake to catch her.

As I watched and laughed, little did I know my turn was coming. We put her in a box, I drove home, picked up my terrier and proceeded to take her to her new home. Duffy stuck his nose in the box and let the chicken out! Feathers flying, dog barking and me screaming as the chicken and dog went round and round in the back of my Pinto wagon! I tried catching each

of them as they went past me with little luck. So, I put the dog out of the car, crawled on my hands and knees into the back and grabbed for a tail. Am I glad the guys didn't see that!

The chicken is growing fat and happy and Kerry took Ed on as a deputy, even though he failed his test in *chicken catching*.

Pat Graybill
Secretary
Southwest Regional Office

CRUDE BUT EFFECTIVE

While on a routine patrol of Locust Lake State Park I observed several people on nature walks and taking pictures of the winter scenery. Returning to my car, a gentleman approached me and had several questions he said needed answering. One of his questions which caught my attention was, "If this lake doesn't freeze over we're not going to be able to 'ice-fish' when the first winter stocking arrives, are we?" I informed him that it didn't matter whether or not the lake was frozen over, fishing would go on as scheduled. This being his first year as a winter fisherman he wasn't sure if a lake had to be frozen over in order to fish it legally.

When I straightened him out, he then insisted I come over to his car to see his ice fishing rod which he made himself. His fishing rod consisted of about 18 inches of broom handle, a metal rod and three 1/16" flat washers and tape. The flat washers served as line guides, they were glued to the metal rod with Crazy Glue! I told him it was a little crude and he agreed one hundred percent. We both laughed over his homemade pole which turned out not to be as funny as we both thought.

A couple of weeks later I ran into the same gentleman who had 3 nice brook trout in his possession. He informed me he was fishing by two other fishermen who had caught three fish between them and he already had his limit. He said he wasn't laughing because he had caught his limit and they didn't — he was laughing because the one fisherman came over to him to find out where he *bought* his ice fishing pole. I wished him luck on his next fishing experience and went on my way.

Raymond C. Hoffman
Deputy Waterways Patrolman
Schuylkill County

ONLY "THE SHADOW" KNOWS!

While on patrol along the Loyalhanna Creek in Westmoreland County, I had spotted four fellows along the stream indulging in their favorite brew. As I moved within a few feet of them, behind some bushes, I saw four beer cans tossed

into the stream. Just as I was to make my arrest, I heard the voice of District Waterways Patrolman Doy Hyatt and Deputy Guy Hess say, "We would like to see your beverage containers." The four fellows replied, "We are not drinking and did not litter." Just then, as his shadow moved forward, a voice replied from behind the bushes "All of you have littered." To everyone's surprise, there stood another deputy waterways patrolman! All four defendants settled on a field acknowledgment of guilt.

Amil A. Zuzik
Deputy Waterways Patrolman
Westmoreland County

INDOMITABLE!

While on patrol at Ryerson State Park Lake during last winter's trout season, I had an encounter that really made me stop and think.

At the upper end of the lake, I stopped to talk to two anglers who were about to depart after a day of fishing. They had three rainbow trout between them, and they couldn't say enough about the fine fishing in the lake and the Fish Commission's trout stocking program. After listening to gripes and complaints from other anglers that very same day concerning the size of fish, lack of fish, etc., this was heartwarming — to say the least.

But what really made this incident unique was this: one of these fine gentlemen was on crutches. He had multiple sclerosis and literally had to drag himself, aided by his crutches, down to the lake to fish. His friend had to carry all their gear to their vehicle as this man made his way back up the bank. This unfortunate individual never once complained as we slowly walked to his friend's car, he just kept talking about how glad he was that he could still get out and fish and thanked me and the Fish Commission for the beautiful trout we stocked.

Maybe those of us who are more fortunate than this man should take a long, hard look at what we have to be thankful for and do a little less complaining ourselves. My hat goes off to this fine Greene County angler.

Gary E. Deigler
Waterways Patrolman
Greene County

MORE FUN THAN...

Heavy snows were predicted for the afternoon, schools were let out. So, being the type that doesn't believe anything until it happens I went and bought a dollar's worth of minnows, filled several thermoses with coffee and hot chocolate and grabbed a bag of leftover Christmas

cookies. When the school buses dropped the neighbor kids off I made a few phone calls. Shortly, my wife and I, accompanied by a van full of teenage boys and girls were drilling holes in the ice and setting tip-ups. Before the afternoon had passed we had nine "flags up." Two sublegal pickerel were returned to the water and one fine 15-inch bass made the ride home with us. Penny for penny, I don't think I've ever enjoyed a dollar spent more than that one. Take a kid fishing! You'll remember that smile when he or she pulls that first fish through the ice or onto the bank a lot longer than you would remember catching the fish yourself.

Robert Lynn Steiner
Waterways Patrolman
S/Luzerne County

DEDICATION!

I talked to a really dedicated ice fishing enthusiast last winter. Going into a remote lake for some winter trout fishing he got his vehicle stuck very badly twenty miles from nowhere. After three hours, he was once again back on his way into the lake. After setting up his tip-ups, cutting holes, etc., he had his limit in twenty minutes. On his way back home, guess what? Yep, stuck again. After another tiresome two hours he was free. Total fishing time: twenty minutes; total "elapsed" time: five hours. Man, that's dedication!

Paul Antolosky
Waterways Patrolman
Centre County

FOUL PLAY?

While ice fishing with relatives on Lake Wallenpaupack last December, we found ourselves surrounded by fishermen and tip-ups. A flag on one of the tip-ups was set off, indicating a strike, and about six fishermen began yelling that "someone had a flag." The lucky angler, finally noticing the flag, went half running, slipping and sliding across the ice to the tip-up. All eyes were on the fisherman as he carefully lifted the tip-up from the hole, took hold of the line and gave a sharp jerk. He began pulling the line up as though he had hooked the fish. But, by the time he had retrieved the 30-plus feet of line, a *shiny sardine can* with its lid half open came sliding onto the ice! Shortly thereafter, many chuckles bordering on uncontrollable laughter could be heard coming from the fishermen in the area. To add insult to injury, I overheard one of the friends of the embarrassed angler ask him if the can had any sardines in it!

Stan Plevyak
Waterways Patrolman
Washington County

Ashore & Afloat

by Gene Winters

For many folks, naming a baby is not the easiest task ever faced. No matter how thoughtfully selected, ceremoniously tested on relatives and friends, and unanimously endorsed, rejection may still be forthcoming. I speak from personal experience and informal, unscientific surveys I've conducted over the years. Thus I'm sure few of us ever completely accept our given name. During at least one period of time — most likely the teenage years — we are convinced that our lives, our careers, our very being have been negatively affected by thoughtless misnaming.

But names are important to all of us. In spite of the computer age, we still maintain at least that degree of individuality. Then, too, we name pets: dogs, cats, horses — just about every animate object. In some cases, we name physical and material things like trains, buildings, planes, to name a few. So, why not boats? I mean *all* boats, large or small. Why should someone need to captain an ocean liner, pilot a tug, or skipper a massive yacht before the craft is worthy of a name? I believe any vessel, any size is worthy of a name — be it runabout, rowboat, canoe, yacht, freighter, or raft. After all, when it comes to a pleasure or recreational craft of any type, it is really a personal extension of its owner. Notice, too, how manufacturers always manage to prominently display their name on almost any size boat. What harm if we all give our personal ego a little shot in the arm by placing a name on the transom or side quarters?

Unless you intend to document your boat or apply for a VHF-FM marine radiotelephone station license, the "name-the-boat" game is pretty well wide open. Even then, the few restrictions that apply are really governed by common sense and good



Except for the "home port," the author didn't have to change his boat's name.

taste. In the event you do plan to apply for a radio license, remember the boat's name will appear on the license issued by the FCC. For this reason, as well as the fact the name will be used over the public airways, it will be closely scrutinized by that agency. The FCC will obviously not approve names such as "Mayday," "Distress II," or words with an official connotation. Likewise, that agency will reject any profane names (although some pretty "suggestive" ones have been hitting the air lately).

The last I heard, the FCC does not *require* a boat to be named to obtain a radio station license, although they — and other governmental agencies — *prefer* the boat be named. It makes identification a little easier, whether it be to track down illegal or improper operators or help locate and identify a vessel during a search and rescue operation. It also is helpful in communicating as, after giving identification as required by FCC Rules & Regulations, it's easier and faster to both say and understand a boat name than a lettered or numbered call sign.

If the boat name will be used over the air, it should be easy to pronounce and understand. True, it is possible to spell the name phonetically, but this in itself is time-consuming and often adds to the confusion. Don't look to me, either, for help in selecting a name; this is one other talent I don't possess. (At least so my wife informed me when she rejected the names "Melody Ann" and "April Star" for any of our four daughters.) Lack of progress in finding a name for one of our boats promoted me to run a boat-naming contest among my fellow employees, with a free boat ride to the winner. The award-winning name was "**Prayalot**." (For some reason, the winner not only never collected on his boat ride, he refused to even come and look at the boat. Was there some meaning in the selected name that frightened him?) We thought it was a cute name and rushed to letter "**Prayalot**" on the transom.

What a name! Each time I went on the air, I found it necessary to repeat the boat's name over and over and



Shouldn't these folks enjoy displaying a boat's name on its after quarters?

ad to spell it out phonetically almost every time, letter by letter: "Poppa" — "Romeo" — "Alpha" — "Yankee" — "Alpha" — "Lima" — "Oscar" — "Tango!" Each time, the marine operator missed at least one letter. Not that she wasn't trying; not that it was her fault; it was just a difficult name to understand over the air. The only consolation was that when the operator finally did get the name it would prompt a chuckle or two. I'm sure they always envisioned an ancient old tub on the water, breaking apart around me as I spoke.

The Coast Guard, as one might suspect, was much more reserved with its reaction to the vessel's name. But, to tell the truth, they, too, had great difficulty in grasping it. I recall once, when assisting a distressed vessel, being addressed by the CG radio operator as "Payalot," "Bayalot," "Brayalot," and several other names I couldn't recognize. In frustration, the radioman finally reverted to my FCC-assigned call sign — WZD 5549 — to continue the transmission. It was annoying to him;

embarrassing to me. I no longer thought the name was cute.

Naming our present boat was no problem at all — it was already displayed on the transom when we bought it: "MEL-ANN." The previous owners had the same first names as my wife and I, although I don't usually use my first name. (Am I still suffering from a misnaming syndrome?) At any rate, all we had to do was remove "Drexel Hill" from the transom and replace it with "Hershey." (That's one nice thing about not documenting your boat — you can display your hometown instead of a "hailing port.")

When it comes to naming a boat, there are many rules — some based on tradition, some on superstition. You'll probably be glad to know almost every rule is countered by a contradictory rule. Like most things in life today, tradition is often ignored. Among the diehards, however, one school maintains that once a boat is named, that name should remain with that boat for all time, regardless of the number of owners it sees. The

other side, though, finds just as many examples where the name changes every time ownership changes.

About the most you can do to protect the name you finally select is to hope no one else chooses it. When you sell the vessel, however, you can insert a "name reserved" clause in the bill of sale, retaining the name for use on your next boat and thus advising the buyer he'll have to find his own name for your old boat. If he doesn't change the name, lawyers tell me there's little you'll be able to do — or afford to do.

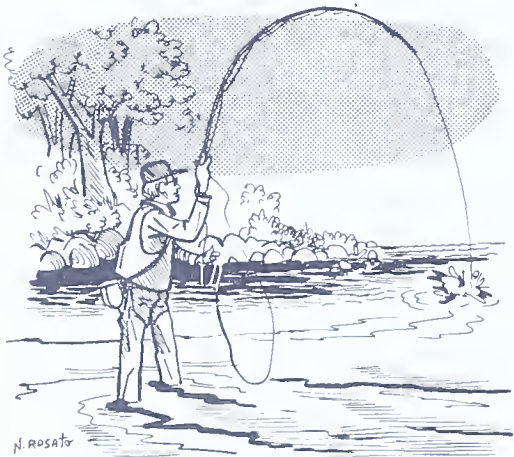
There are also conflicting rules on adding Roman numerals to a name when it is moved from one boat to another. One belief is a Roman "II," for example, can only be added to a vessel that is an exact "look-alike" to the original vessel. The other view holds that a name can be carried forward to each succeeding boat, regardless of type of appearance, simply adding the appropriate Roman numeral to the name. Pleasure boaters frequently follow this latter school of thought. Thus, when you see the 45-footer named "John Doe IV," you can reasonably assume the owner has worked his way up to his present vessel. There are other reasons — often sentimental — for carrying a name forward. Especially since many pleasure boats carry the names of wives, girlfriends, or lovers. After all, who would want to run around on the water with another man's wife's name prominently displayed on the transom?

There is probably as large a stable of names in the boatyards as at the racetracks. The possibilities for names are just about as endless. Names of loved ones, jokes, puns, nautical flavorings, heavenly bodies . . . the sky's the limit when it comes to choosing. But, rest assured, no matter how hard you try to find a distinctive and exclusive name, sooner or later you will see it mirrored back at you from another vessel's transom. In this case, don't fret too much. Smile politely at the other captain and continue on your way. Unless you "lifted" the name, with knowledge-beforehand, you have as much right to use it as he. Just get a name on the transom or side quarters. Afterwards, you'll have plenty of time to uncover a rule or tradition that justifies your choice.

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

FISH FACT: Fish spawn their eggs by the thousands, even tens of thousands, but their species is continued even if only three or four out of every thousand eggs develop into mature fish. This is nature's way of preventing overpopulation of fish.



Holding the rod tip high, so that the full spring effect of the rod comes into play, helps in controlling and netting a fish. If the rod tension does not take all the fight out of a big fish, it may make a run. Then the rod should be lowered and slack line allowed to run through the guides, with the angler's fingers keeping a light pressure on the line.

Low, clear, calm water calls for smaller dry flies: sizes 16 and 18 and certainly no larger than 14.

To take the curl out of a nylon leader being used for the first time, draw it between two layers of soft rubber with firm pressure applied. A piece of an old inner tube, doubled over, does the job well.

Try tiny black bivisible dry flies when trout are particularly finicky.

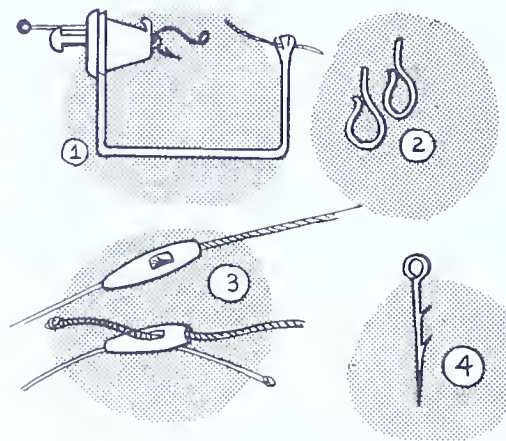
Best nails for leather wading shoes are those made of soft iron. They grip better than nails made of hard steel.

Rarely is it possible to catch good fish of any game species in water that lacks some kind of cover. Fish demand cover for their own protection when they are resting and prefer similar water for their feeding. Open water exposes them to attack by their enemies.

Snelled bait hooks are not to be trusted, even when they are new. It is better to buy loose hooks and tie them directly to the leader or to the monofilament line.

Fish during a light shower, if there is no lightning. Falling rain disturbs the surface of the water and makes the angler less visible and fish are likely to leave the depths and look for food nearer the surface.

Knots are a tough problem for many anglers. So are line-leader and leader-lure connections. Now you can get gadgets that help. They include the leader tyer (1), a plastic line to leader connector (2), no-knot snaps to attach lures to line or leader (3), and eyelets that can be inserted in the tip of the flyline to make leader attachment easy (4).



Spiders often take trout when other flies fail. A spider is nothing more than two large, stiff hackles wrapped around the middle of a size 14 or 16 hook, the hackle spreading out to at least the diameter of a quarter dollar. Fish the fly on a dead float and pay particular attention to pools that have a very slow current. Top hackle colors for spiders are blue dun, light ginger, grizzly, dark ginger, and occasionally black or white.

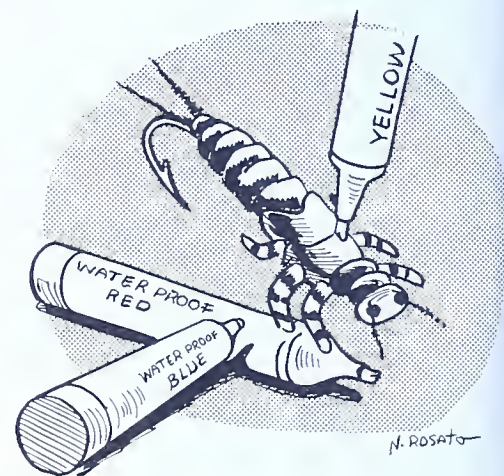
Fishing upstream with a dry fly does not mean that the angler casts directly upstream. If he does, the line and leader will pass over the fish before the fly. The upstream cast is made at an angle to the right or left, so that the fly reaches the fish while the line and leader float past to one side.

Wings that stand straight up are not necessary to make a dry fly attractive to trout. Many natural insects that emerge on the surface of the water, or that fall or are blown onto the water surface from vegetation have wings that lie flat over the tops and sides of their bodies.

Fish a tiny jig, with a hook in size 10 and decorated with marabou or calf tail, under a bobber for big crappies. A very small bobber is all that is necessary to keep the jig off the bottom, and delicate twitches of the rod tip can impart attractive action to the jig over a crappie feeding spot. Marabou dressing especially gives such a lure very lifelike action.

Study any water before you begin fishing it. Try to pick out the spots where fish should be located, then fish carefully so that you cover them one at a time without disturbing any other good lies in the area. Blind fishing of a pool or riffle more often than not puts down fish before you have a chance to present your bait or lure.

Intricate markings of the natural nymph may be imitated in great detail with the use of a waterproof marking pen. The pen can be used on latex, cut wings, and almost any material. Marking pens are available in a wide variety of colors and with either fine or medium points.



To catch a lunker trout, you have to know where he is. But once you have located a big trout in his favorite lie, you find him there until he is caught. Then another big trout will move in. So keep after a big trout once you have located him, but rest him for at least a day or two between attempts to catch him.

Three basic methods govern successful fishing with nymphs. One is to let them drift with the current; another is to make them crawl over the bottom; the third is to swim them through the water. Thus they better imitate natural nymphs, which include drifters, crawlers and swimmers.

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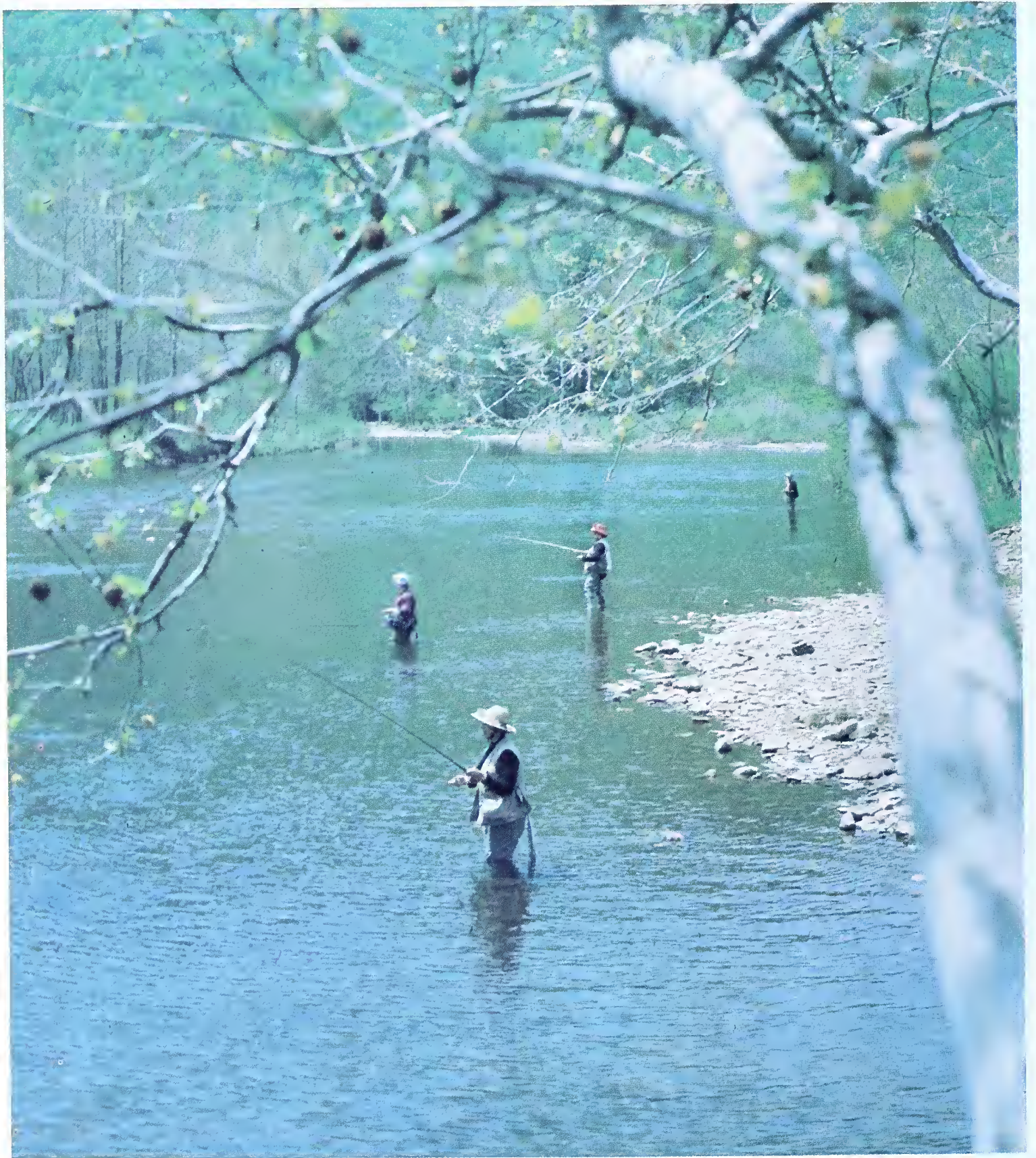
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MAY—1978

PENNSYLVANIA

Angler

the
Keystone State's
Official
FISHING·BOATING
Magazine...

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HELPFUL ALLIES —

From time to time we have alluded to those noble people who have discovered a sport, came to love it, then became very protective of it. That becomes an obsession from which develops an attitude of *loving* the resource more than enjoying its use. Some of those people go on to extremely important volunteer work which involves more than just talking about it or dealing in issues in which they have only a selfish interest. Examples are hunters who have become disillusioned with some of their fellows and volunteer to become Deputy Game Protectors. The same thing happened with about 600 good and loyal fellows (and girls) who have dedicated their spare time to being Deputy Waterways Patrolmen.

How delightful it is to find allies who have caught the higher vision and have seen that what is good for fish is also good for the people; and, following it back another step, keep focused on the tenet that what is good for water is good for both fish and people.

Across our desk comes the most recent issue of *Pennsylvania Trout* for March 1978, issued by the Pennsylvania Council of Trout Unlimited. Out of a four-page document not one inch has been given to enjoyment of the sport itself—such as “how-to,” new approaches, etc. Rather, the entire issue demonstrates Trout Unlimited’s enlightened, broad approach to many subjects which do not even mention the word “trout.” They have come a long distance from the early days of the dry fly purists and strict preservationists. Although those classifications still exist in their ranks (and we hope they always will), we are proud to claim as allies an organization that realizes the complexities of environmental problems and goes about educating its members in as comprehensive a manner as their average span of attention will permit.

The March issue has a good summary analysis of the Federal Surface Mining Control and Reclamation Act and how it will eventually affect Pennsylvania. Also discussed is the pending designation of the Delaware River as a federal wild and scenic river, including the always ominous threat of reactivating the Tocks Island Dam project, still advocated by Pennsylvania’s administration and DER. Treatment is given the President’s signing of the amended Clean Waters Act (PL95-217); excerpts are quoted from the State of the Union message, including references to our national energy policy that can affect not only the environmental status of resources in the lower 48, but a designation of interest lands in Alaska.

Of interest to all Pennsylvanians are the proposed Flood Plain Management Bill (Senate 743) and its companion on storm water runoff (Senate 744). Fish Commission positions on the proposed changes to Water Quality Criteria (Chapter 95) and Industrial Waters (Chapter 97) are summarized with capsulized versions of the technical differences critiqued by the Fish Commission. A summary is presented of the results of the public hearings held in February by DER regarding Pine Creek’s designation as a wild and scenic river, including an explanation of the position taken by the Pennsylvania Council of TU wherein they requested both state and national designation to preempt the dam builders. Attention is also called to the recently issued Consent Order by the Commonwealth Court involving DER and the Chernicky Coal Company, which case is precedent setting.

We are pleased to see mention of the Pennsylvania Cooperative Fishery Research Unit and an accurate discussion of the review and critique of the 1978 Annual Work Plan, the Fish Commission’s position and where they are going from here. Also discussed is the problem of what has happened to DER’s mine inspectors, many of whom have joined the federal establishment because of higher pay; and, an in-depth treatment on “How Much Do Public Hearings and State or Federal Task Forces with Public Participation Affect Decisions?” That last one is timely as the Fish Commission and TU have both had members on the Task Forces for Wild and Scenic Rivers and have been somewhat frustrated by the administrative elimination of the top priority streams over the objections of Task Force members. That treatment also asks the question about what public opinion can do to affect Chapter F revisions proposed for critical conservation areas.

In summary, Pennsylvania’s Council of Trout Unlimited has performed excellent service, not only for their members but for anyone in the general public who might be interested and get a chance to read the publication. Conservation is no longer a simple subject of seasons, sizes and creel/bag limits that can be argued around a hot stove. Today’s conservation world requires an enlightened citizenry who can react and respond based on knowledge of facts and not just prejudicial opinions.

Ralph W. Abele,
Executive Director

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

Published Monthly by the
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COMMONWEALTH OF PENNSYLVANIA
Milton J. Shapp, Governor

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FRONT COVER

Every angler has his favorite trout. To some, the native brook trout gets the nod; others prefer the brown trout for his distinct ability to play hard to get. Unquestionably, the colorful rainbow, the "leaper" of the trio, has its own following for as many reasons as his tail has spots. Fun to catch, great on the table, everyone's favorite!

Photograph by Roger Latham

BACK COVER

An eager shad fisherman, followed by other members of the "fleet" heads for the school. This spring scene was photographed in the vicinity of the Keystone State's famed Delaware Water Gap by Tom Fegely.

MONTHLY COLUMNS

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ANGLER'S NOTEBOOK

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James F. Yoder, Editor

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HOPEFUL...

I am looking forward to receiving my first issue of the Angler. I have read the Angler in my school library and have enjoyed looking at the catches other people have sent in. I haven't caught any exceptional fish yet. I'm only 14 and have a lot of years to go to catch a record fish. I'm going to send some pictures in late spring and show you my catches of trout. I also want to send you some pictures of carp and catfish that I have caught and am going to catch. Sometimes when I fish at the Monongahela River at night the carp will come up and just about take the bait out of your hand. Please rush me my first issue. Thank you.

FRED CRUM
Pittsburgh

WE'VE GOT ONE...

This will be our third year with the Angler and we think you have a really good magazine. I am just starting out fly fishing and I wonder if you could print an article or recommend some books on the best type of line and reel to use and things like that. Thank you.

ROB WNUK
Dickson

How about Techniques of Fly Tying & Trout Fishing, written by George W. Harvey and published by the Pennsylvania Fish Commission? It's available at the Commission's Harrisburg Headquarters for \$1.50. Mail orders should be addressed to us at P.O. Box 1673, Harrisburg, Pa. 17120 Ed.

"BEST EVER," HE SAYS —

As a long time subscriber to the Pennsylvania Angler I must write you to say that the December 1977 issue was, to me, the best ever.

I not only learned how to clean my dirty cork handles on my rods, at long last, but the article by Theodore Kiffer about the Local Fly Tier had a layman's Glossary of Fly Terminology which has long, long been needed.

Top the above off with Don Shiner's

Representative Renwick Gets the White Hat



On January 8, 1978 at the meeting of the Northcentral Division, Pennsylvania Federation of Sportsmen's Clubs, Executive Director Ralph W. Abele presented the Commission's highest expression of esteem and respect—the *White Hat Award*—to Representative William F. Renwick in St. Mary's, Pennsylvania. Representative Renwick was elected to the Pennsylvania House of Representatives in 1954 and has been reelected to each successive term representing the 75th Legislative District covering Elk and Clearfield Counties. As Chairman of the House Committee on Game and Fisheries for over 15 years, Mr. Renwick has supported Fish Commission programs, activities and policies in an outstanding manner. The award reads in part: "In recognition and appreciation for unselfish contributions to the programs and goals of the Pennsylvania Fish Commission and efforts willingly and untiringly made in the general cause of conservation for the betterment and benefit of the people and the natural resources of this great Commonwealth, and by the aforementioned action will now and forevermore be recognized as one of the Pennsylvania Fish Commission's 'Good Guys'."

article on how to make spoons weedless and we have received one of the most practical issues ever.

A. M. BERLIN, ESQ.
Pittsburgh

Both Mr. Kiffer and Mr. Shiner will be glad they helped, Mr. Berlin. We're happy to hear you liked it. Ed.

FROM INDIANA...

I am sending my check in regards to a new subscription to your magazine. I have

been living here in Indiana for sixty years but still remember my childhood fishing in Pennsylvania. We have a lot of good fishing in my new state, but I still member Pennsylvania and enjoy your magazine very much. My father has a camp in northern Pennsylvania which we visit once in awhile and enjoy fishing.

I would like to read more topics on the Tionesta, Marienville Area where I know there is still good fishing and remember very well. I enjoy your magazine much and keep up the good work.

BILL MCWHORTER
Valparaiso, Indiana

HERAPEUTIC . . .

I would like to extend my subscription to the *Angler* and commend the Fish Commission for a very fine job in stocking and making our waters here in Pennsylvania fishable. I moved to Edinboro from Pittsburgh while in college and rediscovered the joys of fishing. Recently, while doing volunteer work in a juvenile rehabilitation center here I discovered the dyomite trout stream that was just across the street (Big Conneauttee) and decided to take a few of the boys over to see if they might get interested in trout fishing. Needless to say, it was a big hit with the boys and every night after school they would want me to take them over to the stream — which we did. We had a great dinner one night and later on into the morning the boys caught on to crappie fishing in Edinboro lake. I recommend fishing to anyone trying to find common ground with the younger generation. It seems to be universally magnetic and therapeutic. Although I am hopelessly addicted, I could think of no sweeter way to pass my spare time. If more fathers took their boys fishing I believe we'd have much less juvenile delinquency. Keep up the good work and maybe put a few nice browns in the streams this spring. Last spring one of the boys caught a baby musky (21 inches) which we threw back.

TOM GREGG
Edinboro

ANTIQUÉ WANTED

I would like to put a request in the Lucky Boots monthly mail. My request is for a 1926 Pennsylvania Fishing Button. If I can find this 1926 license, I will then have completed my collection dating from 1923 to 1978. If anyone can help me out, please drop me a line with the price.

IVAN L. ALBRIGHT
131 East Fourth Street
Williamsburg, Pa. 16693

WANTS "F-F-O"

I'm a fly fisherman and see many trout stockings as I'm retired and have some time on my hands. Several years ago we fishermen had sections of the Martawney Creek and Tulpehocken Creek aside for fly fishing; now we have none in Berks County. I hope some time in the near future we in Berks County will have a stretch on some section of a trout stream. It's pretty hard to compete with bait fishermen. I see some places where they stock trout and wish they would spread the stocking along the streams instead of dumping them all in one hole as

most of the stockers do. If you're a fly fisherman you know it's rough to compete with a dozen or more bait fishermen. I'm not against bait fishermen by any means; I fish bait for bass and muskies in their season; but, for trout it's flies. I never kill any fish I don't intend to take home and eat. I think the limit on trout could be set at five the same as bass (*sic*). I hope I've not offended any bait fishermen but I still remember my first trout on a fly and that's the thrill of a lifetime. I tie my own flies and that's my hobby. So, here's for a wonderful New Year of fishing.

Yours for clear streams
JAMES WALTERS
Reading

In regards to a Fly-Fishing-Only area in Berks County, I have personally been involved in three evaluations of proposed Fly-Fishing-Only areas: two on Tulpehocken Creek and one on Maiden Creek. Two of the sites did not meet policy guidelines and the third was withdrawn by the landowner. At the present time, approvals of all special regulations areas are suspended until inventory and classification of all our trout-stocked streams is completed. The date for completion on the inventory stage is scheduled for the fall of 1979. This inventory should, among other objectives, identify streams appropriate for special regulations areas.

The more I survey our trout-stocked waters, the more I am puzzled by the tendency of many fly fishermen to ignore all waters except Fly-Fishing-Only and Fish-for-Fun areas. By late May the crowds have left the streams while the remaining trout have successfully adapted to stream life and are feeding on whatever invertebrate life the stream has to offer. It is now time when the bait fisherman finds it "rough to compete" with the fly fishermen. Believe me, the fish are there — primarily grown-wise brown trout which put the challenge back into fishing. Try one of Berks County's many streams which maintain a summer water temperature that does not exceed the low seventies — and see if everything you are seeking in a Fly-Fishing-Only area has not been there all along.

Richard W. Marshall
Area Fisheries Manager

PROOF POSITIVE!

I caught this stringer of walleyes during a week-long period from July 27 to August 2, 1977 at Lake Wallenpaupack. These five fish represent the largest of over 70 walleyes I caught over this period. They range in size from 25 inches, 5 pounds 5 ounces, to 31 inches, 10 pounds 8 ounces, with the total stringer weighing 36½ pounds. All were caught on Rebel lures

while trolling at night. Four of the five will be mounted.

I am fairly certain that this "documented" stringer is a lake record and might possibly be a state record but I realize that Pennsylvania does not keep "stringer" records.

I hope that you can print the photo because there are at least a thousand fishermen who came to Lake Wallenpaupack last year who would not believe it unless they saw it. I know this for a fact because I work at a marina on the lake during the summer and have talked to literally hundreds of fishermen who leave Lake Wallenpaupack firmly believing there are no walleyes in the lake. Some become downright belligerent when I try to convince them of my catches.

I honestly believe this catch of walleyes from Pennsylvania waters could easily rival any from Canada, Minnesota or any place else.

Thanks for publishing a great state magazine and thanks to the Fish Commission for establishing a great fishery in Pennsylvania.

RICH SCHNEIDERREIT
Stratford, New Jersey



HEAVYWEIGHT?

December 24, 1977

Just had to stop trimming the tree to write you on this day before Christmas '77. I was reading your wonderful magazine, after my wife, Vivian (a fisherperson), gave me a lunch break. We both read it cover-to-cover. Regarding "Notes from the Streams" (January 1978 (continued on page 23.)

MEALS from the CREEEL

by Arthur J. Michaels

OUTRAGEOUS CASSEROLES... fish dishes for singles

Let's face it. Single anglers who enjoy the solitude of fishing alone often prepare and eat their meals alone too. Some Pennsylvania singles meet this circumstance with tremors of anxiety and panic, while others greet the situation with joyful acceptance and enlivened anticipation. How do you feel about fishing and feasting alone? A single angler should understand that "alone" does not necessarily mean "lonely."

If you're a single person who enjoys feasting on your fish catch, then each solo meal can be an exhilarating epicurean episode — from Pittsburgh to Pittston ... Pottstown to Punxsutawney — no more boring meals!

"Why the casserole?" You might ask. The answer is simple. The casserole was invented concurrently with the open-faced spinning reel. Apparently the inventor desired less time in the kitchen preparing meals and more time on the water fishing with the new angling contraption. The casserole still fulfills this purpose: short on preparations, long on tasty combinations.

The first lesson for a casserole — fish dish-for-one — is this: get away from the cookbook for a short spell. Create recipes for your fish catches from foods that *lure* you and herbs and spices that *hook* you. Use your imagination in combination with your taste buds and try to steer clear of what you *think* a recipe "should be." "Should-be" ingredients and procedures often make dull meals! So, modify these recipes and ingredients if you feel particularly inspired, and brainstorm to hatch your own recipes. Now let's not hear any excuses. What's for dinner?



Bluegill 'n Peanut Casserole—

8 ounces bluegill fillet, flaked
1 cup cooked rice, brown or long grain
 $\frac{1}{2}$ cup raisins
 $\frac{1}{2}$ cup salted peanuts
 $\frac{1}{2}$ can cream of celery soup

Pour the soup into a $1\frac{1}{2}$ quart casserole dish, then add the other ingredients. Put it in a 350° preheated oven for about 20 minutes. It's ready to serve when it bubbles freely around the edges. Try this with walnuts instead of peanuts; and you may substitute rock bass or crappies for bluegills.

Icky Fish Sauce

$\frac{1}{2}$ cup cream
4 ounces steamed peas
 $\frac{1}{2}$ cup steamed mushrooms, sliced
1 tablespoon butter
 $\frac{1}{2}$ can cream of potato soup
 $\frac{1}{2}$ teaspoon poultry seasoning
1 teaspoon freshly chopped chives
salt and pepper

Combine all ingredients in a blender and mix at a moderate speed.

(Steam the peas and mushroom before you add them to the blender. Pour the liquid in a small sauce pan and heat to boiling. Lower heat and let simmer for a few minutes, keep covered to prevent spattering.)

Use this sauce as a dip for broiled fillets, pour it right over fried fish, flake 6–8 ounces of cooked fish fillet and add it to the sauce *en casserole*. It looks terrible because it comes out green, but it tastes great!

Wokman's Compensation (Deer Hunter's Variation)

4 ounces trout fillet, flaked
4 ounces cubed venison
4 ounces fresh green beans, sliced
1 medium yellow squash, sliced then diced
3 tablespoons bottled Italian dressing (any brand)
1 ounce sharp Romano cheese, grated (about $\frac{1}{2}$ cup)
1 teaspoon fresh dill weed
1 packet chicken bouillon

Pour the Italian dressing in a medium-sized wok. Heat and spread dressing around the edges. Add all ingredients except the cheese. Stir.

over medium heat for 15 minutes. Keep covered except to stir. Sprinkle cheese just before serving. Serve in a soup bowl or deep plate.

Stuffed Perch Italiano

6-8 ounces yellow perch fillets (or walleye)
1 small zucchini squash, sliced
1/2 medium onion, sliced
1 medium tomato, wedged thinly
1/2 cup croutons (or 2-3 slices of cubed toast)
2 ounces cheddar cheese, shredded (about 1/2 cup)
dash garlic powder
dash salt and pepper

In a medium saucepan or casserole dish, layer the squash, onion and fillet. Make tomato wedges the top layer. Sprinkle a little salt, pepper and garlic powder on and bake for 45 minutes in a 350° preheated oven. Remove casserole from oven and sprinkle cheese on top. Return the casserole to the oven until cheese melts. Serving this dish can be a little sloppy, so eat it right from the casserole dish or serve it in a soup bowl or deep plate.

Large "Mouth-filler"

6-8 ounces largemouth bass fillet, flaked (or smallmouth bass)
2-3 ounces vegetable juice
2 ounces potato chips and pretzels
1/2 cup steamed broccoli
1/2 cup steamed cauliflower
2 tablespoons soy sauce
1 teaspoon fresh dill weed
1 teaspoon onion flakes
dash parsley
dash salt and pepper

Pour the vegetable juice and soy sauce into a small casserole dish. Break up the potato chips into pieces as big as pocket change and the pretzels into 1-inch pieces. Add them to the casserole with the other ingredients. Bake for 15 minutes in a 400° preheated oven. (Save recipe for next month's bass opener.)

Fish Salad Casserole

5 ounces cold leftover brown rice
1 cup leftover fish, flaked
1/2 cup chopped green peppers
1/2 cup peas and carrots
1 tablespoon safflower oil
1/2 teaspoon each of oregano, basil, marjoram, and thyme
Combine all ingredients in a large

salad bowl for a quick lunch, dinner, or midnight snack. Serve cold.

Bagged Trout (Kind-of-a casserole)

1 medium brown, rainbow, or brook trout, cleaned
1 tablespoon clam juice
2 tablespoons barbecue sauce
1 teaspoon parsley
1 teaspoon butter
pinch garlic
dash salt and pepper

Fold an 18-inch piece of aluminum foil in half, and shape a bed in it by crimping the edges. Lay the trout in and pour on the barbecue sauce, clam juice, and other ingredients. Fold the aluminum foil shut tightly but leave room for expansion from steam. In a 350° preheated oven, cook for about 20 minutes on a cookie sheet. Eat it right from the "bag." This goes great with a side dish of *Icky Fish Sauce*.

Even though they won't admit it, feasting fishermen sometimes *buy* fish. But, it's amazing that some of the very same anglers who consistently haul in lunkers with unbelievable skill

can't readily identify *fresh* fish at the market. Whether you're buying or "just fishing" at the fish market, here are some facts to keep in mind to identify fresh fish with ease and insure their tastiness:

1. Fresh fish have clear, transparent eyes. They should not appear clouded or foggy.

2. Fresh fish have dark red gills, not pink or brown gills.

3. The fins of a fresh fish are light-colored — never brown, graying, or darker than the fish's body.

4. Fresh fish taste better and cook more evenly when they're thawed overnight in the refrigerator rather than cooked frozen right out of your freezer.

5. In general, cooked fish is ready to serve when it flakes easily with a fork. But if your kitchen has a "fishy" smell after you've made a fish dish, you overcooked the fish. When your cooked fish flakes with a fork and no fish odor persists after your meal, you're nearing the bullseye for gourmet fish cookery.

Panfish are cooperative at this time of year and it should be no problem getting the makin's for the author's Bluegill & Peanut Casserole.



Bait Up

by Don Kingery

illustrated by
Ray Piccolin

MINNOWS

Minnows are the second most popular bait in America for three reasons; they are the main food of the larger gamefish, they are obtainable spring, summer, fall and winter, and they are effective year-round. Technically, the term minnow refers to members of the family Cyprinidae; but, for our purposes, almost any small fish, will serve as bait. Although small minnows will often take big fish, the following is a general guide to which sizes to use for each type of game fish.

SPECIES of FISH	LENGTH (in.)
panfish, trout	1 to 2
crappies, bass, trout, perch	2 to 3
bass, pike, walleye	3 to 5
pike, walleye, muskellunge	5 to 12

Minnows can be found in almost every unpolluted aquatic habitat and some species even survive in polluted areas (depending on the type and amount of pollution). Search for them in small streams, brooks, rivers, lakes, ponds and swamps. Minnows are most often taken by seining and seining is usually more productive at night. A seine four feet square is just right for small streams. When seining during daylight, stir up the bottom to make the water cloudy. This makes it difficult for the minnows to see the net, and they will often rush into it while trying to beat each other to the bits of food that were stirred up. In shallow water an umbrella net works very well. Lower it into the water after tying some pieces of bread to it. When you see minnows swimming over it, raise it—fast! In deeper water glass or wire traps baited with bread work very well. If you are not in a



Pennsylvania's new state record northern pike was caught on a minnow by Sherman Keller, of Hazel Hurst, who was fishing Kinzua's Chappel Fork. The monster measured 45-1/2 inches, weighed in at 22 pounds 12 ounces.

hurry to fill your bait bucket and want to have some fun, take a fly rod and catch your minnows. Use very small hooks (sizes 14 to 20) and bait them with bread, small pieces of earthworm, or tiny aquatic insects. If all else fails, go to a bait store; most carry live minnows in all sizes. They also carry them dried, salted and pickled in brine or oil.

Most people who raise minnows do so on a commercial basis. It is hardly worthwhile for the average fisherman to invest the time and money. Indoors it requires a large tank with a filter and aeration system. It also requires a lot of fish food. Outside you will need a pond or several ponds if you expect to raise more than one species. Minnows from local waters are best. They will be hardier, more resistant to disease and have a higher survival rate in general than "imported" varieties. The pond alone will provide enough insect life to sustain a population of minnows large enough to supply the needs of the average angler. If you want to raise large populations in small ponds, supplemental feeding will be necessary.

There are three methods of doing this. The first is to string electric lights about six inches above the surface of the pond, and burn them at night. The insects attracted to them fall into the water where they are eagerly taken. The second is to make

platforms about two feet square out of quarter-inch hardware cloth and suspend them about a foot above the water. Put all your biodegradable bait (fruit, vegetables, fish entrails, etc.), on these platforms. Within a week, fly maggots will be crawling over them and falling into the pond to be eaten by the minnows. The last, and most expensive method is to buy commercial fish food.

The best place to keep minnows is in a livebox or cage in the water. If kept for long periods, they'll need occasional feeding but will require little other care. The second best place for them is in an aquarium. Keep the water filtered and well aerated. Minnows should be fed chopped earthworms, bread crumbs, and aquatic insects. Next in line are various minnow buckets on the market. The type with an inner liner made of paper-mache are the best. The liner allows air to dissolve into the water while keeping the water clean through evaporation. Most other minnow buckets are double, with a smaller type inner bucket and a larger outer bucket. This allows you to change water as the minnows run out of oxygen. If it isn't convenient to change the water, invest in a portable aerator, some oxygen tablets, and periodically dump some into the bucket.

When transporting minnows over long distances in warm weather, it's a good idea to put a couple of chunks of ice in the water. This not only keeps the water cool so it holds more oxygen, it slows down the minnows' metabolism so they require less. When fishing, always put the minnow bucket in the shade; this helps keep the minnows fresh and active. Minnows can be kept for a month or more without feeding by putting them in a jar of water in a cold refrigerator. However, before fishing with them, you must allow the water in the jar enough time to gradually warm up to the prevailing outside temperature. Otherwise the thermal shock of going from cold water to warm water will kill your minnows.

When minnows are scarce, or you don't have time to collect them, a supply of preserved specimens is quite useful. Dead minnows can be preserved by freezing, packing in salt, or drying. When salted or dried, the minnows will shrivel, but soaking in water for a short time will restore them. You can preserve small baitfish in a brine solution. Boil water for ten minutes to kill the bacteria and add salt until no more will dissolve. Either salt or sea salt works best (table salt has additives to prevent its caking). Pack the minnows in a jar and pour in the brine. Larger minnows should have an inch long slit in the side to allow the solution to pickle them. If you want the minnows to stay firmer, add some borax to the solution; use about one part borax for every four parts salt. Minnows can also be preserved in a formalin and alcohol solution, but this tends to give them an unpleasant odor.

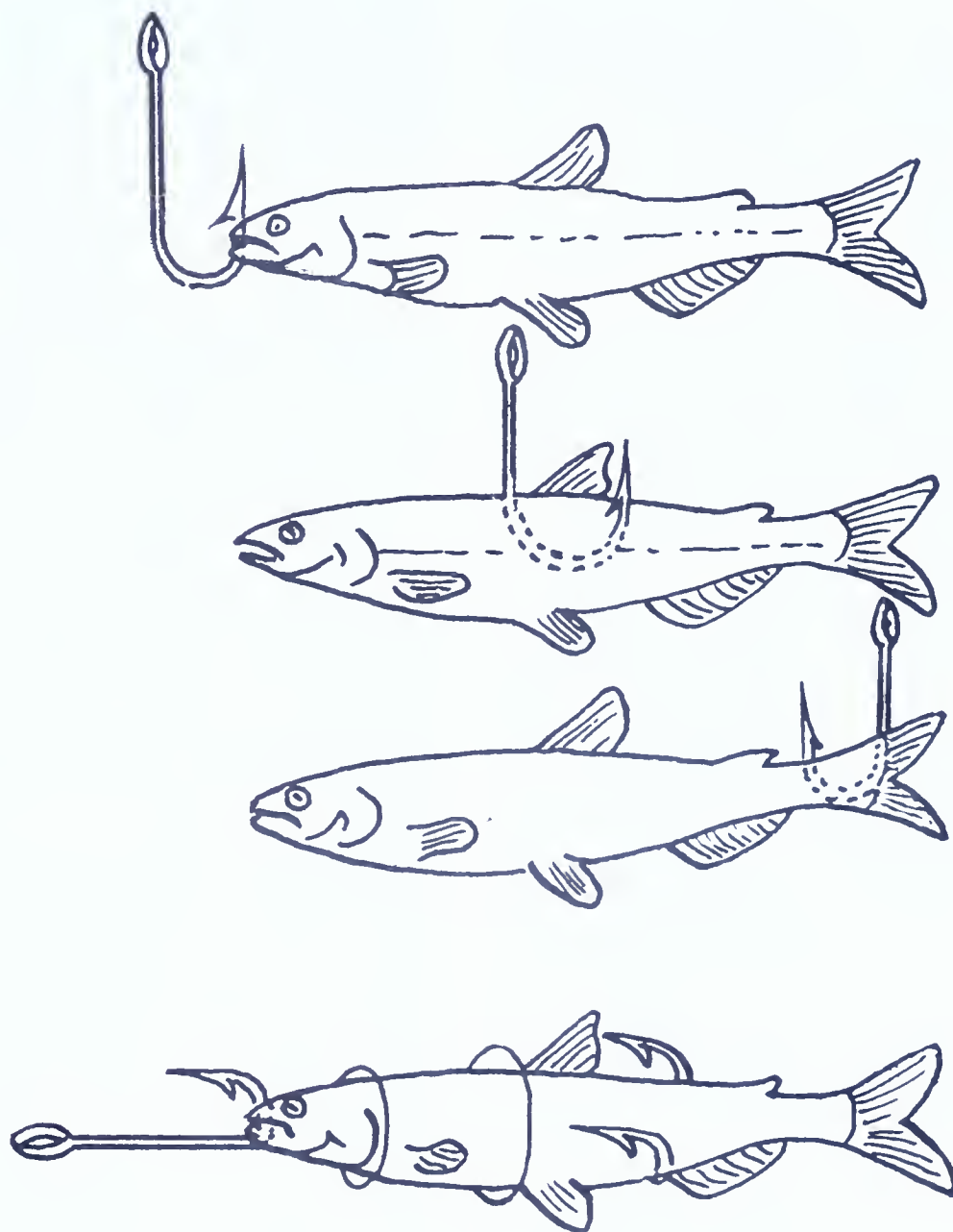
The way you hook a live minnow depends on how you intend to fish it. For trolling, casting, and still fishing, hook minnows through *both* lips. If you only hook them through one lip they won't be able to shut their mouth to force water across their gills and soon succumb. For still-fishing or drifting, some people prefer to hook minnows through the tail or through the skin just behind the backfin. When using the latter technique, don't go too deep or you'll hit the spine and kill the minnow. A good rule of thumb to remember is that a lip-hooked minnow will tend to keep working down toward the bottom while a back-hooked minnow will keep trying to

work toward the surface. For more strikes when drifting or still-fishing, use two minnows on a hook instead of one.

Dead minnows are divided into two classes, fresh and preserved. Fresh minnows are preferred because they still have the natural odor of a live fish and this odor helps attract gamefish. There are dozens of methods of hooking dead minnows, but the following are the most common. The easiest is to use a commercial harness or a safety pin hook. Run it through the body lengthwise and snap it. Minnows can also be "sewn" onto the line. Use a needle large enough to fit the minnow, thread on a length of leader and insert the needle in the anus and out the mouth. Attach a treble hook to the leader (tail end for normal trolling, head end if you want to troll it

backwards) and pull it up snug against the minnow. Next attach the leader to a swivel and the swivel to the line. Always use a swivel to prevent line twist when trolling.

When using a single hook, pass it through the mouth, out the gill and under the skin near the tail, leaving the point exposed. This will put a bend in the minnow causing it to spin when retrieved or trolled. Another technique is to pass the hook and two to four inches of line through the lower lip and then through both lips before hooking it under the skin. Some fishermen cut off the head at an angle to cause the minnow to spin. Dead minnows are most often trolled, or cast and retrieved, but fresh dead minnows still fished on the bottom are deadly bait for catfish, bullheads, and eels, especially at night.



In Retrospect . . .

DELAWARE RIVER SHAD FISHING

*"Time and experience have sent most of
my best shad theories down for the deep six
. . . there are no shad experts, only shad fishermen!"*

by Buddy Grucela

Living almost within casting distance of the Delaware River has, through the years, given me treasured memories of having filled my stringer as well as my soul. However, it wasn't until the spring of 1960 when I hooked my first shad that I realized the thrill of "big fish" fishing.

Since that day a fair share of shad have graced our table, a lot more have slipped my hook and only the Lord knows how many have crossed the stern or passed by the Shad Queen's bow.

Yet, paradoxically, after fishing for this exciting fish for the past 17 years I must admit that while I have learned how to fish for this magnificent critter I haven't learned much about the fish itself—except that every shad hooked, regardless of size, weather or water conditions, will fight you head and tail right up to the landing net and then some.

Time and experience have sent most of my best shad theories down for the deep six making me a strong believer in the old adage that there is no shad *experts*, only shad fishermen.

Ironically, shad are not new to the Delaware River. They just seemed to disappear from the scene sometime during the late 1930's and then suddenly reappeared once again in noticeable numbers in the spring of 1960.

One hears a lot of talk along the river but exactly what prompted the revival of the spring spawning run of these sea-going silver streakers will never be known for sure.

Some say the return of this native was the direct result of successful downriver multi-million dollar clean

water programs. A few go so far as to put the blame on the "beginning of the end" on excessive commercial netting at the turn of the century. Sport fishermen like to believe that shad during this period never were scarce . . . just became a lot smarter. Perhaps this best explains why much has been said about this mysterious fish but very little has been written.

As best I can remember, my introduction to shad fishing came in a rather strange way: while I was *trout fishing!*

It was a typical trout fishing day in mid-May and the water of Little Martins Creek was clear and cold, and not a solitary soul was in sight. All the ingredients of a perfect day were at hand.

I had just creeled my second trout when I heard a car come to a screeching halt on the nearby bridge. A few seconds later the familiar face of Joe Kluska popped over the concrete abutment.

He paused a moment to fish out a choice cigarette, struck a light, cupped his hands and puffed out the words, "How many?"

I answered, "A few, Joe, a few."

With his usual precious pup grin, he pressured, "Just *how many* is a few?"

"Two brownies, so far," I replied. "Both keepers," I added.

"In other words," he said, "what you have is a couple of ruffle sniffers."

But before I could offer some defense or justification he tugged on his Panama hat, smiled and said, "Pack up that fly rod, grab your spinning rod and let's get in some real fishing. I like to smell water when I fish."

I climbed the small brushy bank the road, uncoupled my rod and popped the question. "Where were you fishing Joe?"

"After shad," he answered, "first I want to look at your *keepers*."

He lifted the lid on my creel, peeked in and remarked, "Well your cat won't starve tonight," adding "married life must be pretty tough these days."

Darn it! I didn't have a cat and I didn't know it. Besides both fish were decent size.

Joe was no wise guy; this was his way. In fact, through the years he has always been a prime source of information and enjoyment for me. Being a bachelor all these years, he gave me a lot of time to acquire plenty of firsthand outdoor knowledge which he eventually passed along to me. I was always grateful to Joe for the cause in the early years before I had a set of wheels of my own he provided the transportation to a lot of hours on the lakes of northern New Jersey and the wild and beautiful mountain streams of Pike and Monroe Counties. Joe also was another big plus, the reputation of knowing where the big fish were.

A half hour or so later I found myself standing on the banks of the Delaware River with spinning rod in one hand and a handful of rattle mean looking hooks called shad darts in the other, ready to cast for a first shad. I remember seeing only one shad crushed

I watched anxiously as he threaded the line through the eye of his rod, fastened a dart, added a split weight and then let go with an incredible cast. The dart hit the water with



The author, left, and Joe Cortright with a nice catch from another season.

distinct "ka-plunk." The arc of the cast left the line drifting gently towards the surface so Joe hurried the reel handle a couple of cranks and in seconds had adjusted both line and reel to the strong current.

Suddenly his line stiffened. The rod took a sharp dip.

"Got one, Joe?" I asked.

"Naw, just hung up. Doggone sags, river is full of them," he answered.

After a series of quick pumps amidst a few mumbled words came the snap of the line. I remember well at that time he did not take too kindly to my calling his movement the "shad fisherman's twist."

Taking the hint, I clammed up and began rigging my own equipment. As I prepared to knot the dart Joe left out a yell. "I got one on! See Buddy you got a lot to learn." I couldn't believe my eyes. It was the biggest and fightenest fish I had seen in many a moon. I'll never forget the acrobatic jumps of this fish, the glitter of its silver scales off the sun's afternoon rays and the sizzling sound as the shad peeled the line from his reel.

I dropped my rod, grabbed the landing net and turned around ready for action but the slack on Joe's line

told the sad story: the beautiful fish was gone.

Minutes later we simultaneously offered our best casts to the clear blue water of the Delaware River. A strange silence prevailed but I did catch a glimpse of a smile on my partner's face as his cast outlasted mine by a good 30 yards.

What happened next was inevitable. Joe hooked into another shad while I became acquainted with my own version of the shad fisherman's twist. In panic I pulled and tugged, swished and jerked the rod in every direction, but to no avail. I was hung up but good. No matter how or what I tried I could not free or break the line. Finally, in desperation I backed up high on the bank and proceeded to give it a 175 lb. jerk (namely me). The line snapped with a twang, sending me head over heels into a big brush pile.

Gathering up my senses and surprised body I hurried back down the bank to find Joe with his own net in hand about to put the cap on his first shad of the day. "Fantastic Joe, fantastic," I repeated over and over again.

"Some help you were!" he replied. "By the way, just what pound test line are you using?"

"10 lb., why?"

"No wonder you can't get any casting distance and you need a team of mules to tear it loose," he chuckled. "10 lb. test is great for cleaning out the bottom of the river, though."

What happened to me that day should have been televised. To begin with, I was totally unprepared to challenge a fish of such size and stamina on light spinning tackle the way I was accustomed to using it.

My 10 lb. test monofilament was obviously too heavy to achieve any casting distance. The drag on the spinning reel had been turned down tight . . . specifically set to dare any fish to break the line or otherwise suffer the consequences of being cranked straight in.

All this topped off by no waders and a short-handled landing net that I found years ago that probably belonged to Marco Polo.

For me there wasn't much need of a net or waders in those days. My type of fishing was yank em, bank em, or beach em. However, I soon realized that those methods of landing fish would never do for shad. No matter what, they would not allow themselves to be horsed or railroaded into the landing net.

When I finally got one close enough to slip the net under, it zipped right through the netting with an impressive burst of speed and power, thrashed along the shore line, scared the devil out of me and in a silver flash was gone.

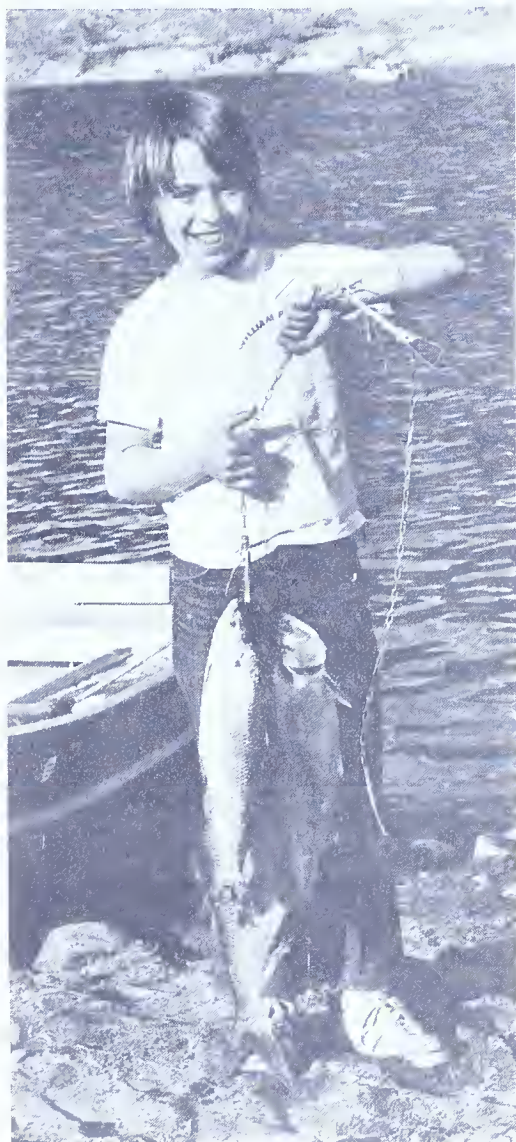
My stringer was still empty when Mother Nature rang down her curtain of darkness. Beginner's luck had been somewhere else. My only catch of the day turned out to be a severe case of shad fever.

The next morning, bright and early, I was back . . . this time ready for action. My spools were filled with 6 lb. monofilament and the rest of the reel was greased and oiled to perfection. At my side was a brand new aluminum long-handled net.

I strung five shad that day while losing at least twice as many. The one thing I had not figured on was exhausting the entire supply of darts. I learned quickly that light lines make long casts, catch more snags, and bring back fewer darts. When the last snap of the line gave me the word that I was through fishing for the day, I realized for the first time I had met

my match. This fighting fish had made a fisherman out of me in every sense of the word.

Later that evening I was shocked right out of my socks to find out my dad had caught shad on hook and line back in the early 1930's. He had taken his shad on a silver spinner but couldn't remember the name. Even more surprising was the fact that this fish was caught within 100 yards from the scene of my day's catch.



That stringer of shad that Conrad Snyder is holding is reason to smile—all taken at Lackawaxen.

Dad's chosen spot was the old foundation that featured a concrete pier which in turn housed two steel pipes that acted as a suction device to draw water to cool the turbines in the nearby cement mill.

Ironically, Dad didn't have any waders either. Since this pier extended nearly 30 feet from the shore he figured it was made to order to pick up some extra casting distance.

During the summer and fall months

that followed I researched and read everything I could get my hands on about shad. I accepted the shadbush theory believing wholeheartedly this mysterious fish began its upriver migration when the shadbush or Juneberry came into full bloom. I wintered over by collecting every conceivable spinner known, always hoping to come across the one that Dad had used.

Spring arrived with the usual "Think Trout" theme. My enthusiasm increased as opening day neared. When the big day finally came I was once again standing elbow to elbow with other fishermen competing in the usual opening day trout catching marathon. In the days that followed plenty of trout were in my creel but shad were on my mind. I kept a watchful eye on the Delaware River and waited for the shadbush to show her colors.

When the big happening finally occurred I headed for the river with my box full of spinners anticipating a shad on every cast. I practically casted my brains out right into the first week of June. I caught everything but shad. In the end my stubbornness and determination to follow Dad's act left me with only tired arms and no shad.

In 1963 I abandoned the blooming bush theory and started shad fishing in March. I darn near froze to death. After weeks of shaking and shivering I retreated to the cellar to try my hand at making shad darts. They were fierce looking things with crude green bodies and exceptionally long light green feathered tails. Capped off with a pair of tiny eyes on each side. My thinking was logical—shad feed on green plankton in the ocean, why not the river? I didn't catch many shad that year but I sure did scare a lot of fishermen!

Several months later I found the reason my "logic" was faulty during a stream shocking survey with Pennsylvania Fish Commission Biologist, Dave Daniels. It turned out that I was as green as my darts because, according to Dave, shad don't feed during the spawning run. But, he did like the idea. Miles Witt said all they needed was a little mustard.

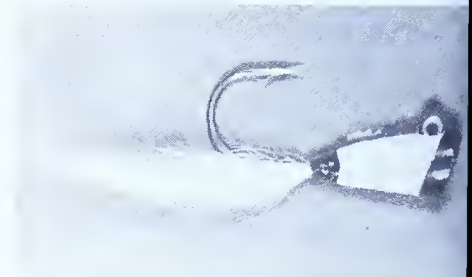
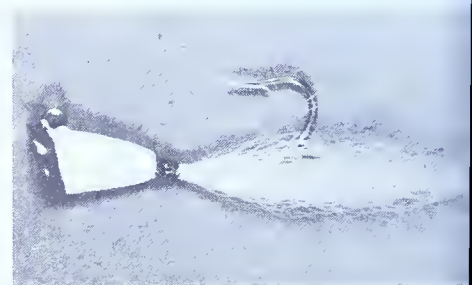
In 1964 I went back to the drawing board with the aid of an able friend and fly tier. Together we fashioned a mold designed specifically to give the dart a streamlined effect. It had a

yellow and white body with a w tail made from deer hair. They caught plenty of shad.

The following year we made an important improvement by cutting down on the length of the tail. I had come to the conclusion that a lot of soft stri and lost shad were because they were getting too much tail and not enough hook.

He agreed with my soft str theory but he argued that the shad was more than likely because we were using the wrong style hook. Thinking made sense, we didn't need hooking power since shad do hook themselves. So, why not cut down the size of the gap between the shad and point? This would at least make it harder for the shad to shake the hook.

We switched from the half-round style hook in favor of the No. 2 g



Author favors O'Shaughnessy hook top photo, to the half-round, lower photo, which he once used

O'Shaughnessy jig hook. After why not use a basic saltwater hook to catch a saltwater fish? The hook worked and the proof was on the stringer.

During the 1965 shad run the conditions varied from one week to another. One day a passing thought occurred to me: why not try different color combinations to match the water conditions? My friend obliged.

In 1966 and 1967 I experimented with different color combinations and found out that for early fishing when the water is murky or off-color without doubt more catches occurred on the yellow-red dart with white. When the water cleared and the

re shad made the scene most of the catches were made on the red and white bodied dart with a white tail.

I have preferred and used this color pattern ever since.

The first thing a shad fisherman must learn about is the shad itself, his second lesson is about monofilament. The ultimate goal of every shad fisherman is to outcast the other guy. If you don't believe it, take a close look at the expression on the face of the guy next to you when your cast outlasts his by a considerable distance. The reasoning here is simple enough: the heavier the line the more difficult it is to cast.

From 1963 through the 1965 season I conducted experiments on several different brands and weights of monofilament. I found out some startling facts that had accounted for a lot of lost shad. To begin with no brand of monofilament, regardless of how much you pay for it, is meant to last forever. Heat and ultraviolet rays of the sun cause monofilament to deteriorate and the lighter the line the faster the deterioration.

The first sign of trouble usually comes in a sense of stiffness in the line, causing the line to become weak and brittle. This process can be slowed down a bit by keeping your reel out of the sunlight as much as possible and with an occasional dunking of the reel, but you're only asking for trouble. One tends to forget that, when retrieving the line over rock and across other obstructions, small and almost invisible nicks on the line will occur. And, chances are you won't find out about it until that big shad is gone. Watch out for faulty rod guides—they can and will fray the line.

Experience has taught me the best insurance against such disasters is to buy lines in bulk spools and change them as soon as any of these factors appear, especially if most of your fishing is done from shore or wading.

My biggest hang-up with mono during those informative years came in the way of unbelievable line twist. For the life of me I couldn't figure out why it happened. The mono manufacturers were convinced the problem was occurring during the transformation of the line from the service spool to the reel spool. They eased my frustrations with simplified directions and a lot of free line. But even after



Standing while landing fish is frowned upon in the safer boating circles but this pair threw caution to the wind to land that trophy shad, below.



following their instructions to the letter the same problem reoccurred every time. Then one day while I was doing battle with a big shad, cranking him to death while watching anxiously as the big fish continued to peel line from the spool. I heard these immortal words from behind.

"Buddy, you still don't know nothing (sic) about shad fishing. Stop reeling against the drag, you're gonna twist up your line." Joe Kluska sure was determined to make a fisherman out of me.

In 1966 a puff of white smoke from within my reel signaled the loss of the

biggest shad on the river, so I dedicated the entire shad run to the understanding of drag. This is probably the most important aspect of shad fishing since shad have paper-thin mouths and will absolutely not allow themselves to be bullied in any way. Therefore, setting the drag becomes a matter of particular finesse. Experts say setting the drag properly requires the use of a scale tied to the line after it has been threaded through the rod guides which in essence allows the drag to be set to 15 percent of the line's breaking strength. To be perfectly honest, I didn't understand

this philosophy then and I absolutely do not believe in it now. Mostly because there are only a handful of line experts along the river and the only scales I ever see around are on the fish's back.

Somewhere along the line somebody has overlooked the fact that drag pressure drastically changes when a fish surges, takes a deep dive or takes off on a long run. An example that comes to mind was Professor John Swinton's tackle buster of a few years back. John's drag reacted to perfection during the shad's short runs and deep dives, but when the fish made a long run to the other side of the river the line snapped like a rotten rubber band. Something else to consider is that when the sun is hot the reels get hot causing mono to expand which in turn greatly increases the drag on the reel.

The method that I found to work the best, most of the time, is to set the drag moderately light and adjust the drag accordingly during the battle. As the fish's resistance decreases you should gently tighten the drag. Just remember to keep the anti-reverse button on the "off" position and a loose grip on the reel handle to compensate any last-gasp shad surges.

A good thing to also remember is that one can play a fish better with a full spool of line and cast a lot further. The spool on spinning reels should be filled within a strong 1/16 of inch of the lip for top-notch performance. In case you haven't guessed it by now the line spools have been designed to hold a lot more line than you will ever use. Limit the spool to 100 yards of line by using soft cord string for backing. Believe me this will eliminate the ballooning effect caused by too much monofilament and make it a lot easier on the pocketbook.

By 1967 shad fishing was beginning to take hold. It was also the year that I began to realize I had done too much bragging. Trying to get my old spot at the pipe became an impossible task. The earlier I came the more crowded it became. Finally in desperation I began a search for another hot spot. I had theorized for some time that by wading out into the up-river rapids I could narrow down the passing zone between me and the shad, putting the odds in my favor. I chuckled over the idea of "cutting 'em off at the pass," cherishing the very thought of having funneled this exciting fish into such a vulnerable position.

The next day I bought a brand new

pair of waders, paid up my insurance and waded gingerly into roaring waters. I learned an important lesson that year. Shad went by me in individual schools numbering in the hundreds. During the days of low, clear water we were eyeball-to-eyeball and all I could do was stare in disbelief. A couple of cold dunkings finally convinced me that I obviously hadn't found the answer.

In 1969, two years later, I found the shad movements but so did everybody else. Graciousness has never been one of my more redeeming qualities and it was beginning to show more and more with each cast. The strange thing happened, we started fishing as a team, helping one another with snags and line entanglements, netting each other's shad, constantly swapping darts. Fishing became fun again. Shad fishermen indeed a special breed of fishermen.

Then one day, just when things were becoming cozy, Joe Kluska waddling by in a 12-foot aluminum boat and, with a great big smile saying "Big day at the track, Buddy," saying, "It's yours to use any time you want."

I answered, "Fine Joe, how about tomorrow at sunrise?"

He replied, "Shad fishing shad never wait. Climb aboard when I come by the pier."

It was no secret that Joe knew the river but on that day he was particularly impressive. After getting the side of the boat, he pointed the way through the treacherous rapids, guided me to his secret shad spot that he had come to know from his early days of lead-lined net.

A year later I bought my own boat complete with all the necessities and christened her "The Shad Queen" and launched myself into a whole new dimension of shad fishing.

At first, most of the time was spent cruising up and down the river, moving from one pool to another, searching from shore to shore always hoping to discover a new shad bonanza.

On April 24th as the boat gently drifted beneath the only shade arch I lined up with the biggest button on the bank, dropped anchor, threw both lines out off the stern, leaned both rods against the transom of the boat, reached for a sandwich and the jackpot.

I was elated to learn that you could



Shad fishing has quite a following which includes waders and boaters too.

ave to throw a lot of lead around to catch shad. When the sun finally made the last dip over the horizon the sandwich was still tightly wrapped in waxpaper.

In the days and season that followed the big buttonwood became the key to successful shad fishing for me as well as my fishing partners.

The more shad we caught the more curiosity we aroused and the closer the other shad fishermen came, sometimes within a rod's length, finally flanking us on both sides. Every now and then some of the boats would take a shad or two but, no matter how hard they tried to mark our position, the end result was the same: we did the catching and they did the watching.

It was fascinating, I had to know why? Surely these people were good fishermen, it had to be our darts. A friend of mine was a scuba diver, so I lent him down for a look. He came up with the answer.

"The boat is anchored in about 7 ft. of water but you are only fishing in from 3 to 5 ft. water on top of a slick rock ledge. The rock formation is somewhere around 12 ft. long, maybe twice as wide and seems to taper off toward the Pennsylvania shoreline. Your dart is fairly close to falling off the deep side." He conclude, "I didn't see any shad. They probably move out of the deep pocket from below, continue along the ledge passing by the boat and back down into deep water again. You've found the perfect spot . . . it is practically snag proof!"

Naturally, I came to the conclusion: the lower the water the easier it is to catch shad. Wonderful, except that I forgot to tell that to Paul Moyer of Bangor.

Later on that very same day he passed by with a bowing gesture, lined up with The Shad Queen, anchored in the deep water above and caught twice as many shad.

The 1973 shad run was the one to remember, it was our best year. Large schools of scrappy bucks passed through Northampton County the first week in April and kept coming until the middle of the month. Then after a short lull, the last ten days of April featured a heavy concentration of exceptionally big roe shad. A lot of big ones hung around here right up to Memorial Day.

I remember one day in particular when the makings of a big



"Lt. Governor Ernie Kline is by far the most determined shad fisherman I have ever fished with . . ." says author Grucela who has guided many.

thunderboomer chased all the sensible fishermen off the river. The sky turned dangerously black, there was a lot of thunder but no lightning so we decided to stick it out. Before and during the light rain that followed Joe Cortright and I caught so many big roe shad that we became arm weary. There wasn't a shad aboard under 6 lbs. Two of these were award winners — both tipping the scales well over 7 lbs. We boated 11 shad — all roe — within less than an hour. The river was so thick with spawning shad that if you lost one another one would grab the loose dart and pick up the action. There wasn't even time to put them on the stringer.

There are plenty of good shadsters on the river, champions in their own time. I have always considered Charlie Zaines, formerly of Allentown, as the most knowledgeable shad fisherman on the entire Delaware River, Joe Kluska its earliest pioneer and Jim Bashline can stop anywhere along the Delaware River and catch shad. My fishing partner Joe Cortright, an ardent user of the golden flicker spinner, takes his share of shad. There are others too,

like Bob Hahs, Sr., of Easton, and, from the New Jersey side of the river, hard-nosed shad fishermen like Dick Hatch, Jim Kalnas and Roy Famularo.

The Shad Queen's "First Mate," my son Dave, has come into his own. Lt. Governor Ernie Kline is by far the most determined shad fisherman I ever fished with and is indeed a most pleasant man.

When it comes to trolling for shad, Foul Rift's Ed Fritz, John Leshner and Charlie Hawk fill their freezers. Let's not forget their ladies Barbara, Bonnie, and Mrs. Fritz, because they do more than just the cooking.

I'm sure that each and everyone of these people will tell you the same thing: if you don't lose darts you won't catch shad. Fish slow and deep early in the season; as the water warms up, fish closer to the surface. Just knowing about shad is not enough, the real secret to successful shad fishing in the Delaware River lies in one's ability to find the main channel. Shad tend to travel the same channel year after year. Find it and you have found yourself a flashing silver mine worth a lifetime of thrills.



FLURRY FISHING

by Bill Betts

Comes a fellow down the creek with a really nice mess of trout, dangling impudently in the net he has slung over his shoulder.

"Where'd you get 'em?" queries one envious angler.

"What did you catch them on?" asks another.

Not me. The *real* question — the only question that actually matters, that's what he gets from me.

"Say, fellow," says I, "how long ago did you catch these beauties?" For, you see, I am a *flurry* fisherman.

Stick with me here for a second, and I'll explain just what I mean; then, if you want to nod your head knowingly and are inclined to smile condescendingly at "just another crackpot," well, okay.

A long time ago, by means of observational research conducted in the most scientific way, with data carefully recorded, I discovered that trout fishing can be enjoyed most by the angler who knows how to take advantage of the *flurry* schedule.

I discovered that trout feed in a frenzy for short, limited periods of time and then take it easy for very long periods of time. You say, "Sure,

everybody knows that." Yes, I suppose that everybody does, but very few people fish in accord with that information. In fact, lots of fisherman stubbornly defy that fact. Lots of trout fishermen are therefore losing out on some of angling's most attractive pleasures.

Here is what I do: For the first few days of the season on which I can get out for the whole day, I fish from dawn to dusk. I keep a careful record of my strikes, noting the precise minute on which each occurs. After two or three such excursions I have got the pattern established. For one of my testing days, let's say April 18, it will read something like this (Eastern Standard Time):

A typical day for me, fishing flies, is 17-22 trout. If I fish really hard all day, I'll catch 22; if I fish the *flurries* only (maybe a total of one and one-half hours), I'll catch 17.

You see how you can redeem your time if you know the "*flurry*" schedule? If you don't know the *flurry* schedule, you've got to fish all day in order to be certain to catch the hot times.

Now let me append some qualifica-

tions. First, what I am describing is the activity of trout in response to wet and dry flies, streamers and nymphs. I don't know all that much about bait fishing or hardware fishing. I do wonder whether trout tend to feed only in flurries when salmon eggs or minnows are constantly before them.

Second, I am referring chiefly to brown trout. Rainbow trout, in my experience, are a little less fussy about dining hours; and brook trout I can get to hit a white maribo streamer or a black gnat almost anytime.

Third, I know that stream conditions make a difference. I've had great out-of-schedule flurries occur immediately after a rain. I shall never forget one day on which I fished alone the FLY-FISHING-ONLY section of a flooded, *very* muddy stream catching 89 trout on black maribo streamers. Needless to note, it was just one big uninterrupted *flurry* that day!

And we've all had the experience of a new hatch of flies which stir the trout all up. And we all know, too, that daybreak or thereabouts is almost always a fruitful time at which to

be casting; just as the twilight hour, especially with flies hatching, can be really exciting. Moreover, some of us are aware that the really big brown trout satisfy their appetites most ferociously at the midnight moment.

Besides all this, naturally one stream may produce trout according to a flurry pattern somewhat different from what another does.

But enough of qualification. What I am saying is that if you can establish the flurry pattern for your favorite stream for normal conditions, you can have constant action and save a lot of time for some other related pleasures.

Now let's suppose that you accept this premise, that trout feed at certain very limited periods of the day. How should you fish a stream? Well, it's the time between flurries that I want to advise you on, the quiet time.

What can you do between flurries? One thing of course you can do, if you live close enough so that you can get back to the stream for the next flurry, is to go home and work in the garden. But if you have made a commitment to the stream for the whole day, here are some possibilities:

- (1) You can clean the fish you have caught during the last flurry, although as a rule that does not require much time.
- (2) You can savor your breakfast, or your lunch, or your late afternoon tea.
- (3) You can call turkeys, especially if it is the early spring. If it is the spring gobbler season (first three weeks of May), you might even pop off a big bearded bird between flurries.
- (4) You can indulge in that more and more popular sport of bird

watching. I can sit for a long, long time as a student of that wildly touselled bird, the belted kingfisher, observing him in his power dives from his perch and in his eccentric flight up and down the reaches of his domain. He is not a flurry fisherman; his fishing is "round-the-clock!"

(5) If you are a fly fisherman, or if you want to make some money or win some friends, you can break out your vise, your feathers and fur, and tie flies during the quiet hours,

(6) You might watch closely the fisherman who are unaware that these are the quiet hours. I once observed a fly fisherman change his fly 13 times during the period of one hour. He tried various nymphs and exotic streamers, and large and tiny wet flies, and, when he spotted a dimple here or there, some high-riding dry fly. And he was constantly muttering something about how "dang fussy" these fish were, or complaining that the Fish Commission "must not stock this stream any more," or concluding that the water was "too warm," or "too cold."

(7) You might interview fishermen as they appear at your idling spot from upstream or down. "How ya doin'?" Answers are always interesting. One will say, "Oh, I've only just got here," which (translated) means, "No good!" Another will say, "This is the first time I've been on this stream," which (translated) means, "No good!" Another will say, "Caught a few little ones. Threw 'em all back." Which (translated) means, "No good!" Another will say, "Not too good," which

(translated) means, "I've caught fifteen, but I don't want the whole world fishing here."

(8) Of course you can unlitter the stream. You can always do that.

(9) If you find yourself short on energy, exhausted by the travails of the last flurry, you may prefer simply to loll in meditation or in reverie. Okay. There is much to be said for reflection and repose, especially when it is enjoyed at streamside.

(10) You might promote subscriptions to the *Angler*, noting for the potential subscriber that lots of good advice on how to catch trout appears regularly in its pages. "In this issue, for example, we have got a most instructive article on flurry fishing."

You see, the real test of the angler's character is presented not by the flurries but by the time between flurries. It is not only how well he survives the slack periods mentally and physically, but what use he makes of his time. Time lost is a black mark; time wasted reveals a fault of character.

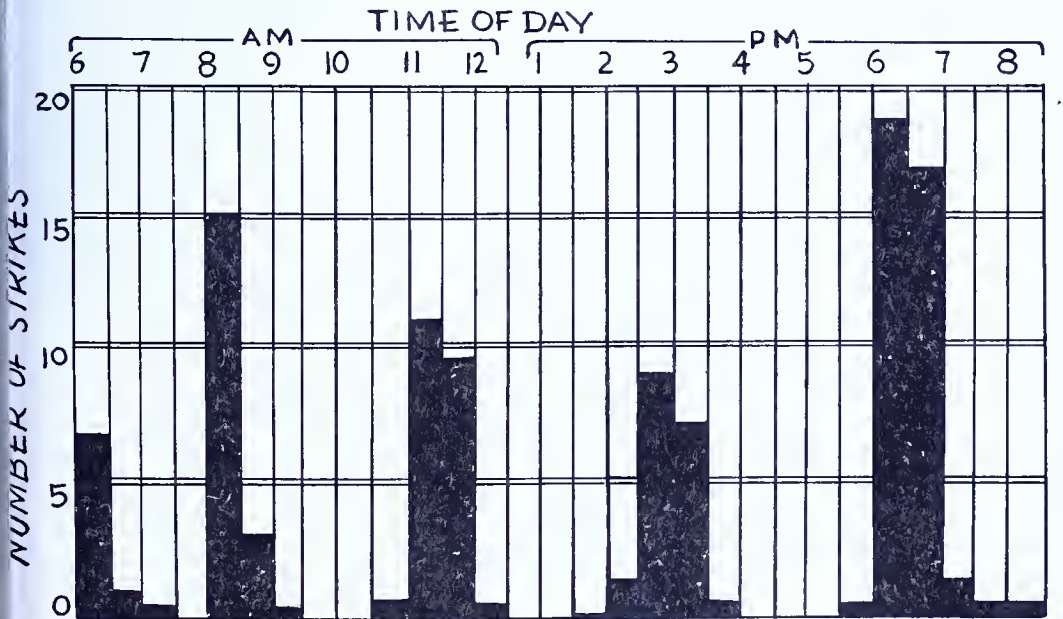
Now of course the angler who keeps beating the water to a froth out of ignorance of the flurry schedule may be exhibiting real character; he is, after all, persevering in the absence of any sign that augurs action.

And the angler who keeps beating the water to a froth even though he *knows* there will be nothing doing from the trout is engaged in a kind of fierce heroism which radiates true character — loud and clear.

One test of character does sometimes arrive right in the middle of a flurry. When you get snagged in a tree or on a submerged log, or snap off your leader in one of the frantic trout, right in the midst of what you know is a nine-minute frenzy — can you keep your cool?

Fishing is the contemplative sport, insisted Izaak Walton, and thousands of books and articles since his time have testified to the value of leisurely angling along a summer stream. You may actually fish only 80 minutes of the day and yet have a really terrific day. There is much to be said for flurry fishing.

As a matter of fact, some other things are just now occurring to me, but whoops! Got to go! Time to catch the 6:12 feeding!



It's not nice to *foul* Mother Nature!



Jim Thorpe Second Annual Ecology Day —

by Frederick W. Ohlsen,
Waterways Patrolman

Photos: Russell Gettig,
Staff Photographer

Last May, "Friday the 13th" was an unlucky day for litter in Carbon County as about 400 students and teachers in the Jim Thorpe School District "turned to" on the waters of Mauch Chunk Creek, Stoney Creek, Indian Mountain Lakes, Lehigh River, Robinsons Creek, Germantown Creek, Drakes Creek and Glen Onoko.

The occasion was the Second Annual Ecology Day and the work

force represented Jim Thorpe Elementary, Junior and Senior High Schools, Immaculate Conception School and St. Joseph's School.

Program Coordinator was Joe Babinetz, Assistant Director, Conservation District. The students and teachers were led (and I do mean *led!*) by Principal Dr. Virginia Landgreen, who swings a mean litterbag!

Jim Thorpe Borough provided work force personnel and equipment

for disposal of the litter gathered and Hontz BP Oil Co. provided plastic bags, a truck and driver to assist the group.

In addition to the streamside litter some of the groups' efforts spilled over and boro streets and portions of local highways were cleared of litter too. The cleanup started at 8:30 a.m. and was generally completed by 2:30 p.m. The enthusiasm of the kids and their teachers was great.



Would you believe the location shown on the preceding
 was the scenic (?) Lehigh River at the mouth
 of the Chunk Creek? It got a real face-lifting when
 volunteers moved in! The group literally
 tore into the abandoned car, above, in Robinson's Run,
 prying it away piece by piece! What appears to
 be the makings of a garage sale, right, once adorned
 the banks of Onoko, Lehigh River! Evidence of the group's
 enthusiasm can be seen on the volunteers' faces, below.
 Now right: dirty debris taken from Drake's Creek.



the mystique of the *TUSCARORA*

by Leo A. Bressler

Several years ago we heard a great deal about the "feminine mystique," a term referring to a compound of various beliefs, ideas and attitudes that presumably give women an aura of mystery and a special fascination. Although an analogy between women and bodies of water would be far-fetched, I believe that certain streams and lakes do possess a mystique.

Every dedicated fisherman can think of at least one body of water that has a special and sometimes inexplicable attraction for him. Perhaps it is a mountain brook tumbling through deep, pathless coniferous forest and laurel. Perhaps it is a river running between rugged cliffs, its bottom studded with huge boulders and its course shifting from rapids to quiet eddies and deep, fishy-looking pools. Perhaps it is a pond in some isolated dark swamp, where trout have found a home built by beaver engineers.

One stream that has a definite mystique for me is the Tuscarora Creek. Seldom mentioned by outdoor writers and never pointed out as a fishing "hot spot," it nevertheless retains a special allure for me, and I generally manage to get back to it at least once a year.

My fondness for the Tuscarora began some fifty years ago when as a youngster equipped with a cheap telescopic fly rod and a single-action reel filled with linen line I made my first trip to the stream. It was actually much more than a trip; it was an adventure, a kind of Odyssey into strange country. The drive from my home in Schuylkill County to the Tuscarora was a long one for those days: ninety miles, over poor roads, and in cars for which fifty miles an hour was a daring speed. The route generally used included a trip across the wide Susquehanna via the historic ferry at Millersburg, an adventure in itself.

The fish we hoped to catch was the smallmouth "black" bass. In our



One of many placid pools which can be found along the Tuscarora Creek.

home area this was almost an exotic species, unknown in local waters. Articles in outdoor magazines and the reports of fishermen who had caught the fabulous bass fired my imagination so that I could hardly wait for opening day (July 1st at that time) and the trip to the Tuscarora that a neighbor had promised me. So great was my anticipation that I spent many hours in preparation — "bobbing" for stone catfish, seining minnows, catching nightcrawlers, carefully checking my meager equipment and "supervis-

ing" my mother's packing of food, clothes and blankets. No African safari was ever planned more carefully.

Even with all the preparation, that first trip was a Spartan affair. We slept in the small car and cooked over an uncertain open fire. The character of the stream demanded wading and, since I had no boots, I wore old pants lopped off above the knee and decrepit sneakers with holes punched in the sides. The results were sunburn, stone-bruised feet, and briar-

scratched legs. Starting at daylight and fishing until sunset, we waded approximately three miles downstream and then plodded back to our car.

For three days we followed this rigorous regimen; but, what thirteen-year-old who has just caught his first bass minds fatigue or discomfort? That first bass, and the other four that I caught, confirmed all that I had heard and the thrill of catching this stouthearted fish. And although my mind was chiefly on fishing, my love affair with the Tuscarora had also begun. Trips in succeeding years, with better equipment, more knowledge and an opportunity to form a closer relationship with the stream, produced more and larger fish and developed a lasting affection for the stream.

The Tuscarora is long and meandering. Born in Huntingdon County and fed by coldwater streams, it makes its leisurely way for thirty miles through the Tuscarora Valley, emptying into the Juniata River at Port Royal. For most of its length it is bordered by woods, especially tall water oaks and sycamores. The valley is still sparsely populated, and during my early visits I often fished a whole day without encountering anyone but my fishing partner. Paved roads parallel the stream only for short distances and, except for its lower part, few dwellings intrude upon its lonely course.

The Tuscarora is a stream of many moods; its headwaters are fairly rapid, but as it moves down the valley, there are long stretches of slow, shallow water which are interrupted by strong riffles leading into deep holes. Its bottom varies from mud to



The "Salmon Hole," a favorite spot for both bass and walleye fishing.

clay to gravel to almost solid rock, although a large part of its bed is the kind that bass find congenial. This scenic and geologic variety lends interest to the stream and also presents a challenge to the fisherman.

During late July and August, when a good deal of vegetation has formed in the stream, success depends upon one's ability to locate open pockets and to make accurate casts. One gets to "know" the Tuscarora only after many visits. Although bridges occasionally cross it, the real fishing is found away from the bridges, and only those willing to hike a good distance learn what the stream is really like.

Except for the fishing, what was probably most responsible for my early fascination with the Tuscarora was the early history of the valley. The very word "Tuscarora" had a thrilling sound to it for me, conjuring up visions of savage warriors, their



The Tuscarora's junction with the Juniata, a popular musky hot spot.

faces smeared with vivid war paint. This was Indian country! The valley had been named after the Tuscarora tribe that moved into the area from the South during the eighteenth century and harassed and killed many of the settlers, at one point driving out practically all the white inhabitants.

When I stood at the Book's Indian mound at the Nook Bridge for the first time, my youthful imagination reconstructed the incident that allegedly had been responsible for the mound. According to legend, two Indian youths found a beautiful flower and began to argue as to who should have it. (*Another version of the legend contends that the boys fought over a grasshopper, and the ensuing strife is known as the "Grasshopper War."*) The Tuscarora Academy, founded in



An early season fisherman tries the bank fishing along the Tuscarora.

1836 at Academia, has been turned into an interesting museum and contains many artifacts testifying to the Indian presence in the valley.) Ultimately, adult members of the encampment became involved in the argument, which ended in the death of a number of them, and they were buried in a common grave.

Whether there is any truth to this tale, we shall never know; but, as I gazed at the mound and the wooded bluff overlooking it, I almost expected a noble redman to materialize out of the twilight shadows. Later on, I was fortunate enough to be able to watch as archaeologists excavated the mound which yielded skeletons, weapons and pottery. After this, no trip to the Tuscarora was complete without a few hours spent exploring for Indian artifacts, usually with some success. Thus a new dimension was added to what I have called the "mystique" of the Tuscarora.

Among the many fringe benefits of my early fishing in this stream was the unexpected and delightful contact with the then-abundant animal and bird life. I recall the beautiful eight-point buck that waded down the stream within thirty feet of my hiding place behind a tree. And then there was the mother mink defiantly ignoring me as she led her five offspring across a shallow branch of the stream. Between the McCoysville and Nook Bridges stood the vulture tree, where a dozen or more vultures often gathered on the dead branches, informing me of their presence by their smell even before I could see them. Herons, bitterns, hawks, and a great variety of small birds provided music and color during the summer, and



The last remaining covered bridge over the Tuscarora Creek is this one at Academia – it is closed to vehicular traffic.

wild ducks and geese chattered in quiet pools during the autumn. At night the water music of frogs, the hooting of owls and the chirping of crickets created a cacophonous lullaby.

Fishing was, of course, the main business to be transacted, and as the passing years brought a closer acquaintance with the stream, I learned the location of certain spots that came to have a special identity and held great promise of success. There was Devil's Kitchen, a deep hole where some satanic power seemed to have scattered great boulders at random. I shall always remember the afternoon when three of us spent several hours trying to get a grandsire bass to take one of the various baits we cast in his path as he cruised back and forth in the clear water.

Then there was the hole at East Waterford, where one day I left my cousin to fish upstream, while I drove upstream for about a mile, with the intention of fishing downstream and meeting him. After fishing well beyond the half-way mark and waiting for about an hour, I drove back to East Waterford to find my cousin standing in the same hole with his limit of bass. Among the many other favored spots were the Salmon Hole, so called because it occasionally

yielded walleyes, the Yellow Hole (now called the Deep Hole), Dobbs' Hole, and the holes near Academia and the Honey Grove, McCoysville, and Nook Bridges.

Naturally, the chief reason why the Tuscarora drew me back year after year was that it contained fish — lots of them. During those early years, catching the prevailing limit of ten bass was no great feat. The Tuscarora was, and still is, a stream for all fishes — or at least nearly all. Trout are stocked from the headwaters down to East Waterford. As the stream warms up, it becomes the home for bass, pickerel, walleyes, rock bass, sunfish, fallfish, catfish, suckers, carp and eels. Lately, a new resident has moved in, the muskellunge. Some time ago the lower part of the stream was stocked with muskies, and they seem to have taken hold. The most productive spot is at the mouth of the stream, where it joins the Juniata. Two years ago four legal-sized muskies were taken at this location on a single Sunday afternoon. Recently I talked with a fourteen-year-old fisherman who, in a few hours, caught two respectable muskellunge in the vicinity of Walnut, three or four miles upstream.

Like all things, the Tuscarora and the valley through which it flows have

undergone change. Only one of the charming old covered bridges remains, at Academia, although it is now unused. There are more houses, especially at the lower end of the valley, farms have been modernized, and more roads have been paved. Several campsites and a hunting preserve have been established, and there are efforts to promote tourism. But one-lane roads still wind through the valley, leading one past occupied log houses and sturdy stone houses dating back to the eighteenth century. And, like "Old Man River," the Tuscarora keeps rolling along much as it did fifty years ago. Here and there the elements have altered the stream's course and spoiled some of the old fishing holes. But there are still fish, some very good ones, and the angler who doesn't mind walking and working at his sport can enjoy the therapy of fishing in tranquil and scenic surroundings — and make satisfying catches too.

For me, at least, the Tuscarora will always have a special meaning and charm. Although I have caught more and larger fish in other, more famous waters, I know that the accumulated memories of many days spent along this stream will continue to lure me back . . . if only for "sit-down" sucker fishing.

Leaky Boots . . .

(continued from page 3.)
issue), a letter titled: "Would you Believe?" by Patrolman Crayton sounded like a Laurel & Hardy skit. The first sentence — "While boarding a small runabout for possible overloading by Patrolman Lavsa. . . ." Then, the boat ended up sinking. We wonder how much does Patrolman Lavsa weigh? We have a 12 foot fiberglass (very sturdy) boat and for him (Lavsa) to come aboard, one of us would have to get out. Oh well, we found the story amusing — being fisherpeople and small boaters at Lake Noxamixon almost every Sunday. The patrolmen do a marvelous job throughout the state and makes one feel a little more secure with them around. Thank you.

Well, Happy New Year and keep the words coming our way.

MR. & MRS. JAMES SWIGGARD
Philadelphia

As you and our readers must surely suspect, the term "boarding" is merely a figure of speech (except in the case of larger craft, naturally). Are we having our oar pulled? Ed.

NEVER TOO LATE!

I am sending a picture of my 85-year-old mother purchasing her 1978 fishing license. She started to fish at 82 years of age and loves it. Last year she caught 91 fish. She just can't wait for spring to come. Her favorite fishing spot is the beautiful Lake Raystown. She is Mrs. Susan McVey, RD # 3, Hollidaysburg.

Let's hear through the *Pennsylvania Angler* just how many anglers there are in this age bracket. Hope this picture encourages more people to get licenses this year.

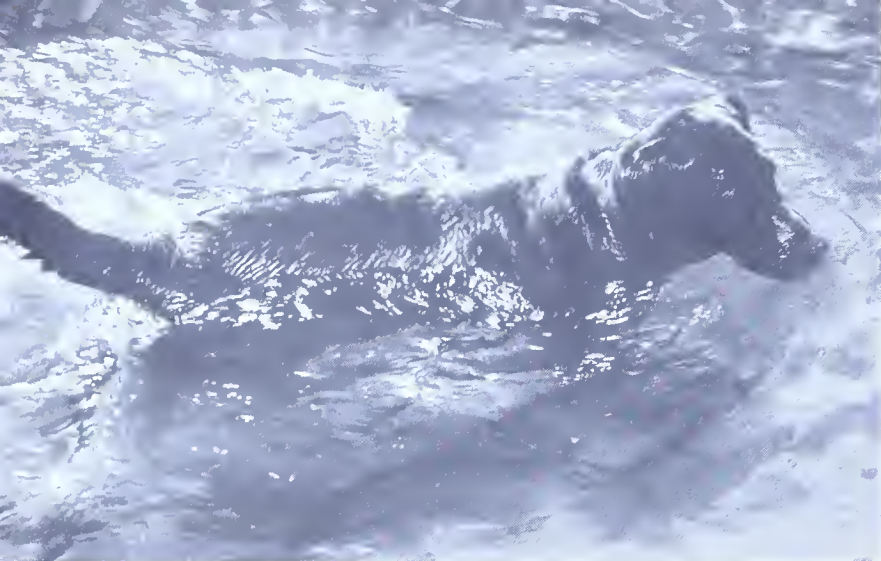
MRS. FRED B. MOUDY, JR.
Hollidaysburg



**YOU SHOULD HAVE SEEN
THE ONE THAT GOT AWAY!!!
YOU DID...IT DID!!!**



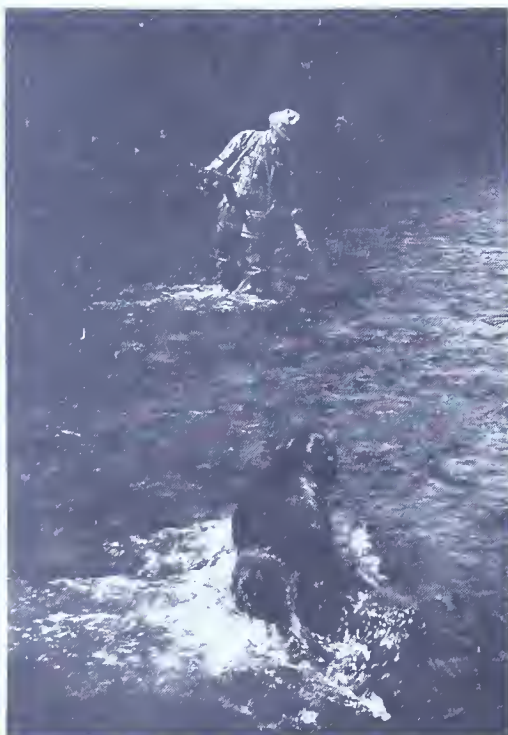
George E. Dolnack, Jr. happened to be in the right place at the right time to photograph this scene. To make a long sad story short, Steve Hurst, of Newton Square, was fishing Marsh Creek Lake's Lyndell side, using a bobber-rigged minnow for bait. The rest is history. A musky took the bait and after giving Steve the thrill of a lifetime threw the hook after the aerial leap shown here.



A Lab Takes to Water

by Don Shiner

Labs are very powerful swimmers and appear to be part dog, part beaver! After a short swim, "Widgeon" is brought to heel to watch her master's attempt to outwit the trout.



Having a dog on shore, racing and splashing in riffles and barking at every moving shadow doesn't sit well with most trout fishermen. What is generally quiet solitude, an almost communion with nature, is turned into a nerve-jangling experience. Few trout are caught. There's not much serious fishing accomplished by anyone nearby. Take a working gun dog or pet along trout fishing and it leads inevitably to Murphy's Law (if anything can go wrong it usually does).

There are exceptions. One is Widgeon, a big, brawny 6-year-old Labrador retriever owned by Wm. Levan of Nescopeck, a village located beside the North Branch Susquehanna River. With the elegance and style of a champion, the well-mannered retriever is a loveable companion. Having convinced himself that

fish are not web-footers, and that he must never "flush" trout, the Lab stands at heel, often in shoulder-high water. He spends time poking underwater to watch the parade of passing minnows. Other trout fishermen who encounter the two make admiring remarks and speak other pleasantries rather than muttering obscene language as they move on.

Levan says that a lot of dog training can be done while fishing. But it takes discipline to train a working gun dog to be a good fishing companion. Once taught stream etiquette, it's easy for him to rest on his laurels thereafter.

For the first few minutes on the stream, Levan gives the dog "his head," allowing him to investigate shorelines and shallows and even have a short swim. Following that, the retriever is called to heel and there he stays while watching the intricate proceedings of stalking, casting and

bringing trout to net.

Labrador retrievers were originally known for their use on waterfowl, but they adapt easily to pheasant hunting and water activities of all kinds. A big, relatively short-haired dog, it is pure black overall, with an occasional one pure tan. This breed has a mild temperament, easily trained, making it a good family dog. It is a fine companion at home, in the duck blind and on the stream.

Shown here is a sequence of pictures of Levan and his retriever boot deep seeking trout in Fishing Creek. It's a memorable day for both. Levan catches a few trout. The Lab has a field day wading riffles.

It's not suggested that every family pet is a born fishing companion; but, with training, most make it. Most cause little disturbance, even while stalking trout feeding in low clear riffles.



"If we can get just two or three we'll all have a meal . . . let's go ashore and see what we've got. Look at those big red spots! Isn't it a beauty? Remember: it's ducks in fall—trout in spring."



A Palmer Cahill Dun

by Chauncy K. Lively
photos by the author

Traditionally, the common names of anglers' flies have been assigned to the insects the artificial flies were intended to represent. Everyone knows, at least among angling circles, that *Ephemera guttulata* is really the Green Drake, *Stenonema vicarium* the March Brown and *Ephemerella dorothea* the Sulphur. This kind of descriptive designation has been used by fishermen since Dame Juliana Berners listed her twelve flies "*wyth whych ye shall angle*," almost five centuries ago. But we now have a problem with a fly that has become a household name in angling. The Cahill, well-known to fly fishermen everywhere, is a fly used to represent some of the light-colored *Stenonema* mayflies and the name has been attached to the hatches themselves. Preston Jennings and other angler/authors have referred interchangeably to both *Stenonema canadense* and *S. ithaca* as the "Cahills," noting that the differences in the two insects are so slight that a single pattern serves equally for both. However, entomologists have effected several taxonomic changes since Dr. Needham's "*The Biology of Mayflies*" was published in 1935. Dr. Edmunds ("*Mayflies of North and Central America*," published 1976) has split the genus *Stenonema* and has moved some of the species, including *S. canadense*, to a new genus, *Stenacron*. Thus, the Cahill twins have been separated and we now have *Stenonema ithaca* and *Stenacron canadense*. Should we continue to call them both "Cahills," even though they are now of separate genera? From a practical standpoint, while such changes in systematics are of importance to entomologists, they are of little consequence to the average angler. After all, the insects



themselves haven't changed and it isn't likely the trout know of the reclassification. When in doubt, the angler's best bet is to capture one of the insects, examine it closely and try to match it with a pattern in his box. If it works it doesn't matter whether the natural is *Stenonema* or *Stenacron*.

The species with which the Cahills are associated are extremely variable in coloration and both entomologists Leonard and Burks, in separate books, have noted that *S. canadense* may fluctuate from nearly black in Ontario to yellow in the southern states. However, in Pennsylvania the Cahills are mainly pale cream in hue, with faintly mottled wings, barred legs and two banded tails. The duns are often slow to emerge and although the hatches never seem as dense as certain others, the trout respond to their presence with enthusiasm.

The Palmer Cahill Dun is an interpretation of the pale species and it has served me well for several years. The wings are cut from speckled wood duck breast feathers, although teal or other barred feathers should work equally well. Natural kapok is an ideal body material because it doesn't readily absorb water and it is easily applied to waxed thread like fur dub-

bing. The hackles are one each, dark cream and brown grizzly, wound from front to rear in open palmer fashion and trimmed beneath the body. This style of hackling eliminates the need of tail support and permits the use of two wood duck fibres for tails, approximating those of the insect.

The Cahill hatches occur mainly in late May and early June but stragglers are often seen well into late summer, particularly as darkness approaches. It's always a pleasure to see the big, light-colored flies appear when daylight begins to fade because they generally assure a spurt of fast dry fly fishing with a visible fly to cap the day.

Editor's note —

With this month's column, Chauncy K. Lively brings to a close the current 8-month series. We mention this for the benefit of new subscribers who might panic at the absence of our fly tying column during the next four months. Mr. Lively will return to the Angler's pages in the October issue.

Fly tying buffs might be interested to know that it was just 25 years ago, this month, that Chauncy K. Lively first began writing for the Pennsylvania Angler. Our congratulations to him on this "Silver Anniversary."

Tying a Palmer Cahill Dun:

Left—Clamp a size #14 dry fly hook in vise and tie in fine, yellow tying thread at bend. For tails, tie in two barred wood duck fibres.

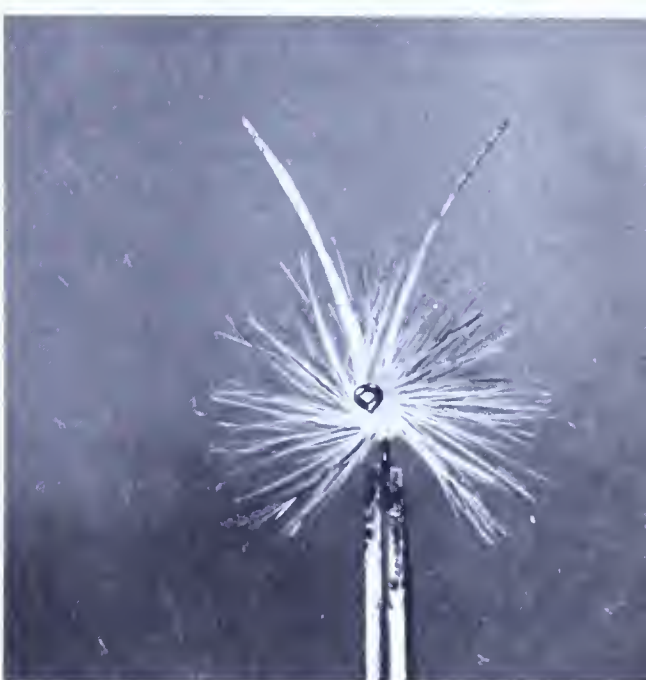
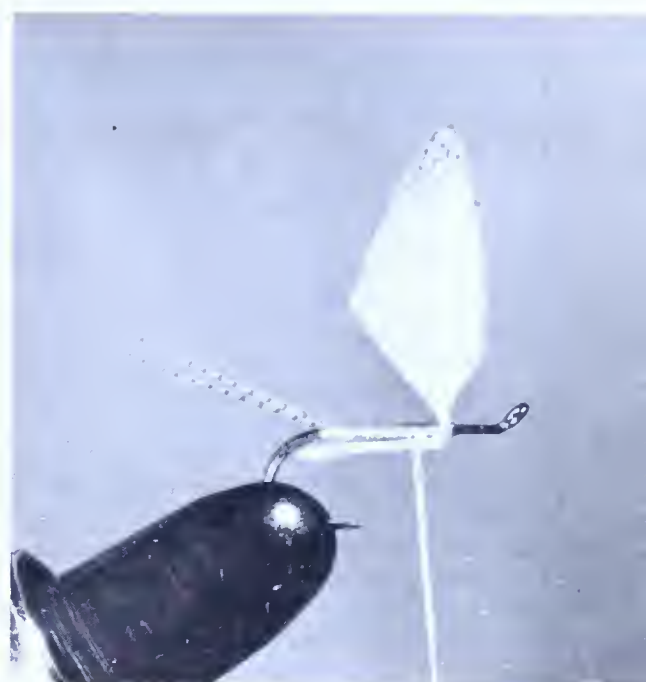
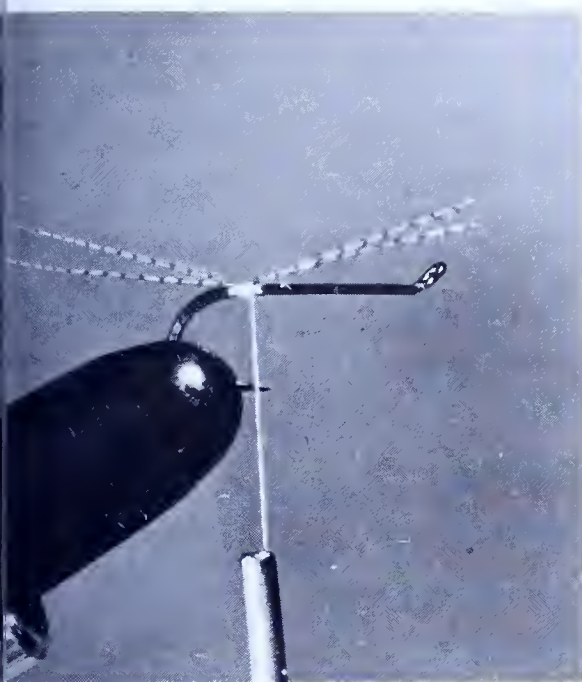
Right—Wind thread forward about 2/3rds length of shank and half-hitch. Cut a pair of matched wings from wood duck breast feathers. Finished wings should be as long as the overall hook length. Hold wings together and upright, back to back, with stems straddling shank. About 1/16" of bare stems should show above shank to allow for thorax dubbing. Make several "figure-8" turns around stems to secure; then check alignment from front. When you are satisfied wings are perfectly straight, bend stems back under hook and wind over the several turns. Then trim off excess stems and apply a drop of hard drying cement to bare stems at base of wings.

Left—Select one each, dark cream and brown grizzly hackles with barbuless about 1½ to 2 times as long as gap of hook. Strip off webby lower barbuless and tie in hackles together, in front of wings, with "figure 8" turns. Hackles should be positioned at right angles to shank, on edge and with dull sides facing eye. Bend stems along shank and bind; then trim waste stems. Wind thread forward to eye and apply a dubbing of natural kapok about 2" long.

Right—Wind dubbed thread back to bend, forming a tapered body with thickest point at wings.

Left—Grip tip of rear hackle with hackle pliers and make a complete turn in front of wings. Then wind hackle back to bend in widely spaced turns and tie off at bend. Repeat this step with the front hackle, following the path of the first. Trim excess hackle tips. Then whip-finish thread around bend behind base of tails. Apply head lacquer to finish windings.

Right—Trim a wide "V" from underside of hackles. OPPOSITE PAGE—The completed Palmer Cahill Dun.





"SMILE, YOU'RE ON...!"

For some time I had suspected a young woman, who was always with the same group of men, of fishing without a license. One dark night I spotted their vehicle and quietly approached while they were all gathered around a gas lantern. They were talking very excitedly about a very large catfish and were preparing to take a picture of the girl holding it. When the flash went off I was standing behind the girl in the darkness. As they still had not noticed me I quietly left. I'm betting that after those pictures were developed the girl went out and bought a license!

Kerry L. Messerle
Waterways Patrolman
N/Lancaster County

"SKINNED" OR "UNDRESSED"?

Last fall, I was skinning a fair-sized salmon. I had the fish hanging in my garage. I turned around and there were three visitors watching — my daughters. Almost immediately the questions began flying! "How did you get it?" "Where did you get it?" "How big is it?" My middle daughter, Beth, didn't have too much to say. I said, "Beth, why aren't you asking many questions?" "Well, Dad," she said, "I was just thinking... I bet that's the first time that fish ever got undressed!" Well, with that we all broke up with laughter.

Jerry Greiner
Deputy Waterways Patrolman
E/Allegheny County

JUST "FIDDLING" AROUND!

He looked like a good prospect, I thought, when I noticed the fisherman in a FLY-FISHING-ONLY area apparently still-fishing, with his fly rod on the ground in front of him. As I drove by, he picked up his rod and began the old pretense: "I'm fishing a fly routine," whipping the rod back and forth.

Not wanting to alert him, I drove out of sight, then eased back into the area on foot with binoculars. The culprit began still-fishing again and I watched him land

and throw back two suckers. Every so often he would reach into the grass nearby, retrieve something and apparently place it on the fly he was using.

Approaching him from behind, I managed to grab onto his line while it was still in the water. When I pulled it in, as expected, there was a juicy worm dangling from the end of his fly. The man had an unusual excuse. It seems as though he would "never had done this" if he hadn't been fooling around and "fiddled up a worm" and was tempted to use it. I asked what he meant and he proceeded to show me saying that he often got his worms this way.

Pushing a large stick into the ground, he began rubbing it crossways with another stick. This went on for some time but *no worm appeared!* He was probably wishing that none would have appeared in his previous "fiddling" performance!

Fred Mussel
Waterways Patrolman
Lehigh County

NO "SURVEY" —

Deputy Ahmed "Chuck" Allih was patrolling among the ice fisherman on Bradys Run County Park Lake during a very cold December morning. As Chuck made his way across the ice, he was carrying his information pad to jot down anything necessary. An elderly fisherman greeted him and asked, "Are you taking a survey?" Chuck replied, "No, Sir! I am in the law enforcement end of things." "Oh!" the senior angler said, "I thought you were writing down how many fishermen there were and how many they were catching!" I'm sure Chuck might find a survey an interesting project; but, like in July!

Don F. Parrish
Waterways Patrolman
Beaver County

EAT 'EM? YOU BET!

During the summer months, Kinzua Dam attracts many out-of-state tourists and also visitors from the Canadian Provinces. I happened to meet a group from the Province of Ontario who were quite inquisitive as to whether our fish were *edible*. I informed them that they

most certainly were. They proceeded to tell me that in the area of Ontario where they live they can only consume one meal of fish a week due to mercury contamination. I was pleased to inform them that at Kinzua we have no restrictions due to contamination.

Paul R. Sowers
Waterways Patrolman
E/Warren County

"TESTING..."

While on routine patrol at Chapman Dam I noticed most everyone was fishing from the bank, or close to it, due to the ice not being too thick — even though it was December 23rd. I checked one little fellow fishing from the bank. He had a hole in the ice about 5 feet by 5 feet. I told him, "That looks like an *unlawful* hole to me." His reply was "I didn't make it, my big fat pop fell through it *testing* the ice this morning! Maybe next time he will use something besides his two big feet."

Owen F. Quarles
Deputy Waterways Patrolman
W/Warren County

TO EACH HIS OWN!

While on patrol of the Conodoguinet Creek with Deputy Waterways Patrolman Gary Shughart, we came around a bend in the stream with the canoe and as we looked downstream we observed a gentleman throwing large stones into the stream. When we arrived at his location I asked the fisherman his reason for throwing the stones into the water. He replied that he was just "waking up the fish." He must have been correct in his thoughts as he had a nice stringer of six suckers!

Perry D. Heath
Waterways Patrolman
Cumberland County

TIME FOR INVOLVEMENT!

I read with great interest an article in the February 1978 *Angler* written by my good friend Rich Tate from Williamsburg. The article was aptly titled "Going ... Going ... Gone" and dealt with the abuses heaped on landowners and their properties by unthinking sportsmen (I am afraid that I use that title all too loosely). It is unfortunate but everything that Rich elaborated on is all too true.

A fact that Rich overlooked is the unwillingness of the average sportsman to become involved. Very, very seldom do I have a fisherman turn in another fisherman for littering — or, in fact, for any violation. If we hope to be able to fish on

private property in the future, we must become involved and help to weed out these unthinking or nonthinking boobs from our midst. I suppose that whole problem stems from our childhood. When we were little our parents told us not to be "tattle tales" . . . we were not to "squeal" on anybody. Unfortunately, some of us took this advice to heart a little too seriously. If we hope to be able to fish on private property in the future, *we must become involved!* Otherwise, when the last "No Trespassing" sign is pounded in we can all stand back smugly and proclaim that we never "squealed" on anyone.

Walter A. Rosser
Waterways Patrolman
Blair County

SNEAKY!

I was recently talking to a young fellow about the large trout in a stream, well-known in Pennsylvania, but where no fishing is allowed. He told me that when he was younger he and his chums could get away with catching some of those fish by floating down the stream in an inner tube with baited lines tied under the tube. When they arrived at the lower end of the stream they would unhook any fish they had caught and beat it for home. The only problem with the technique, he stated, was if you caught a very large trout it was embarrassing to have your inner tube suddenly begin "drifting" upstream against the current.

Larry R. Baker
Waterways Patrolman
Mifflin/Juniata Counties

GEOGRAPHY CLASSES NEEDED

I always receive many calls in the fall of the year pertaining to the salmon fishing at Lake Erie *from local fishermen*; but, this past year I received seven long distant calls from Pittsburgh asking how the fishing was for salmon at Lake Erie. I became curious and asked the caller why he would call Ridgway to find out that information. Most of the callers said that they *thought Elk County bordered Lake Erie.*" (P.S. I was still able to help them.)

Bernie Ambrose
Waterways Patrolman
Elk County

SLINGSHOT?

I recently had the opportunity to present a fish identification and water safety program to two troops of Boy Scouts in Norristown. After the presentation, I asked the boys if there were any

questions. The interest shown was rewarding as many questions were asked. But, the one that made my night was when one young lad asked me: *"Is it illegal to fish with a slingshot or a boomerang?"* I haven't heard of any trophies taken with a boomerang lately!

Guy A. Bowersox
Waterways Patrolman
Montgomery County

ANOTHER ONE!

In keeping with the growing list of mistaken job descriptions for waterways patrolmen, I have yet another one to add.

Recently, at day's end, I stopped at a local restaurant. Upon entering, I saw a friend, Trooper Chuck Gaffney and his family. After the usual greetings, I sat down for my final cup of coffee for the day. A few days later I again met Trooper Gaffney, at which time he said his son had been asking what I did on my job. One of the questions being: *"Does he arrest people?"* When his son received a "yes" to his question, he replied, *"I didn't know Boy Scouts arrested people."*

Larry V. Boor
Waterways Patrolman
Mercer County

DISGUSTING!

The Pennsylvania Fish Commission's COOPERATIVE TROUT NURSERY program is "one-of-a-kind" in the United States, as far as we know. We supply a designated number of fingerling trout to dedicated groups of sportsmen who are willing to spend time, money and effort to rear them to legal size for added stocking in suitable trout waters. Last year we had — believe it or not — a group (or individual) poaching act take place at one of our cooperative nurseries in my district. About a thousand two- to three-inch fingerlings were stolen from the THREE POINT SPORTSMEN'S CLUB ponds. Please, somebody tell me, what are people coming to? What possible thrill could some demented people seek in stealing a thousand baby trout? Kind of disgusting, isn't it? My only wish is that all of these trout grow six feet long, are extremely hungry and the thief slips and falls into the pond and. . .

Paul Antolosky
Waterways Patrolman
Centre County

"FISH AND SURF"

During routine boat patrol of the Susquehanna River last year, Deputy David Miller and I noticed a red object floating

through a particularly rocky and swift section of water near the legendary "Gerty's Notch." As we approached the "object," a head and upper body became visible beneath a red ball cap. Our first impression was that someone was in trouble. Drawing still nearer we could see a fishing rod poking toward the sky. Finally, the object stood up, shook a little and waved. With that gesture our anxieties subsided. The "object" was a Chester County fisherman who journeyed to this section of the river with two companions. Wading and fishing most of the day he found himself about two miles upriver from his starting point. Wearing a Stearns-type personal flotation device and, being weary, he simply sat down, lifted his legs and let the river carry him back downstream to his friends. He exclaimed that his body surfing method of fishing was cool, productive and safe!

Ben Leamer
Waterways Patrolman
Perry County

SURPRISE!

One cool morning I started my patrol car and left my headquarters. As I reached 35 mph I noticed a movement on the dashboard directly in front of the steering wheel. The movement was the last ten inches of a snake disappearing down my defroster vent and apparently headed for my feet! Having been raised during a time when all snakes were things to be feared, and some of those apprehensions having carried over into adulthood, I quickly stopped the car and made a hasty exit. Once common sense overcame fear I drove the car to headquarters and left it parked until the snake found a better home. I'm hoping I can raise my son to have a better knowledge of snakes and be more familiar with them than I was.

Kerry L. Messerle
Waterways Patrolman
N/Lancaster County

MUCH NEEDED —

Several more bodies of water were opened to public fishing last year, as municipalities realized the tremendous potential recreational value of their water supply reservoirs and recognized that present methods of water treatment prevents conflicts between fishing and water quality. A vast number of these water supply reservoirs throughout the Commonwealth remain, however, closed to fishing. The help and support of the entire angling public is needed to convince officials to open these untapped sources of much needed "close-to-home" recreation.

Richard W. Marshall
Area Fisheries Manager

Ashore & Afloat

by Gene Winters

I have always been a paper fiend. I keep written records far beyond those required even in these days of endless paperwork. So much so that I am giving serious thought to purchasing a microcomputer. In addition to the usual bank records, credit card records, medical records, tax records, and insurance records, I keep explicit records on my vehicles and my boat. I realize, as a friend told me recently, most people get enough paperwork at the office and at home without adding more at water's edge. But a boat usually represents a love affair, if not a considerable investment, and if some extra work, paper or otherwise, I consider it a small price to pay for the benefits. If you are not prone to record-keeping, bear with me. This article may show you how and convince you why at least a minimum of paperwork may actually add to your boating enjoyment, make your outings more dependable if not, indeed, even safer; and, possibly save you a little if not a lot of money.

It is important that you first accept the fact that you must know far more about *your* boat than any mechanic or marina operator could ever hope to know. That doesn't mean you must have the ability to tear an engine apart and reassemble it; it does mean, however, you should at least have a working knowledge of what makes it tick. You should know your boat so well that even the slightest new noise or sound alerts your senses. You should know it so well that with just a cursory glance you can detect a single wire out of place or even a bolt that has loosened its grip. It is amazing

how, just by using our God-given senses, we can avoid more serious consequences. As I have said over and over in this column, the boat that takes you out is the same one you are counting on to bring you back. Having the astuteness to really know your boat is, in itself, a great safety factor. It can help you from getting into a compromising if not dangerous situation. Recognizing, instinctively, even the smallest change in boat or engine performance can often keep a minor inconvenience from becoming a major crisis.

Having full and complete instrumentation aboard your boat is the first step in the right direction. This assumes, of course, you take the initiative to understand what the "normal" readings should be and know how to interpret and react, if need be, to even the slightest deviation. Since many problems develop gradually over a period of time, you should either have an uncanny memory for mental record-keeping or a notebook and pen handy. True, there are many logbooks available on the retail market today but I find them either woefully lacking or overdone and, in almost all cases, overpriced. So, you're probably better off designing your own. That's what I did, primarily so I could tailor data-recording to my boat, my operation. Each winter I review my logs with a view to shortening some or eliminating others, but it is interesting to note that I have made only one change in four years: I *added* one more logging detail.

Actually, I maintain two "books." One is a true logbook; the other a compilation of specialized data. The special volume is contained in a simple, three-ring, vinyl-clad notebook or binder. The first thing to go into it was the boat manufacturer's owner's manual, complete with electrical schematics. Next in was the engine manufacturer's factory service manual. The service manual not only covers everything from a minor tune-up to a complete engine overhaul, it also includes a detailed parts list. The parts list is especially useful if you break down on the water and get towed into a marina that doesn't handle your particular make of engine. It gives them proper servicing procedures as well as parts identification. To make it even easier for them I have listed the manufacturer's phone number (as well as that of his three nearest distributors). If the marina needs a part, they have several places to turn. By directing them to wholesalers, they stand to make their usual parts profit. Were they to have to go to another marina or a retailer, they would: (1) have to forgo any parts profit, (2) tack their usual parts profit onto a retail price or (3) hide their lost parts profit in their labor charges. In any case, I'd be a loser in two out of three possibilities and providing wholesale sources tilts the odds at least a little more in my favor for economic survival. Finally, this binder includes an operating/servicing manual on the boat's electronic equipment, such as the depthfinder and radiotelephone.



A boating family ready for a fun-filled day afloat. Photo: Russell Gettig

Oh, I almost forgot (fortunately because I haven't had to use it too much), I also incorporate several engine troubleshooting guides and tip sheets culled from the pages of auto and boating magazines. It's surprising how often, no matter what your knowledge, how logical troubleshooting procedures escape you when you suddenly break down on the water. A quick reference to these articles usually jolts your thinking processes back into operation again.

The real day-to-day story of my boat is contained in a second binder, my logbook. This binder is divided into sections, indexed and tabbed for easy, quick reference. It includes (1) Start-up and Shutdown Checklists, (2) Running Log, (3) Radio Log, (4) Gas Purchases Record, (5) Maintenance & Work Log, and (6) Itemized Key Components List (extracted from the factory engine service manual). Let's take a closer look at the data I collect and record. Author's Note: To make the system feasible, some form of operating timekeeping must be maintained, be it by a watch or an engine hour meter.)

The Start-up Checklist includes checks of various oils and fluids, battery, navigation lights, steering, horn, and more. It is arranged in an orderly progression so as to involve a minimum of time, which reduces the temptation to skip over or ignore certain checks. After the engine is running, a series of additional checks is made and, in some cases, actual instrument gauge readings are entered. The Shutdown Checklist is, in general, a reversal of many of the starting procedures. A particularly close scrutiny is made of all gauges prior to shutting off the engine.

The Running Log is composed mainly of recording start/stop clock or engine hour times but also includes notation of the general boating area (such as to/from locations) and other notes of interest. By recording engine hours and gas purchases, it is relatively easy to keep tabs on gas usage per hour. While admittedly this is an approximation due to variances such as wind, current, throttle position, etc., it works out quite well in practice. For example, I know that last season I never burned less than 4.2 gallons per hour and never more than 5.7 gallons per hour. Accordingly, I also know my average gas

consumption. All this helps in planning gasoline stops, maximum and reserve ranges, and plotting distance/time/consumption curves. Further more, changes in consumption from these figures can alert me to developing engine troubles, propeller problems, heavy bottom fouling, or other deteriorating conditions.

The Radio Log is maintained as required by current FCC regulations and then some. I record all calls I made and receive by call signs and locations. This serves to compile a handy boat phone index for recontacts or quick radio checks. In addition, by knowing range previously obtained, I have a comparison from weekend to weekend on the transmitter output. While my primary radio is VHF-marine, I also maintain an abbreviated log for the CB radio I use for backup.

The Gas Purchases Log is self-explanatory. A little quick arithmetic, using the amount of gas purchased divided by hours run since the last fill-up, gives me a continuing update on the boat's gas consumption. It, too, can signal deteriorating conditions. It also provides a handy, written record of the season's cost for gasoline.

The Maintenance & Work Log is very important and, therefore, very detailed. It is composed of two parts: a checklist section and a note-entry section. The checklist records (logged by date and engine hour time) oil and filter changes, sparkplug and point changes, etc. The handwritten section is filled in very specifically, in sentence form. It is, by date and engine hours, a step-by-step description of every bit of service and maintenance that is performed on or to the boat, engine, and associated equipment. You'd be surprised how often just sitting back and reviewing these pages has helped me spot impending trouble in the past. Only once did I ignore symptoms my own records were trying to tell me; I paid the price by limping back to port under unnecessary stress and tension.

The Parts List is a compilation of general service parts, identified by manufacturer and his part number. This includes such items as spark plugs, points, condenser, rotor, distributor cap, oil filter, etc. In all possible cases, I try to list a second or third source of supply. This speeds up locating a replacement part or, in many

cases, allows advance purchases at sale prices at auto stores, discount houses, etc.

You don't have to own an ocean yacht to justify, or benefit from, record-keeping. Proper record-keeping establishes a discipline that carries many rewards. With the high price of parts and labor today, any steps you can take to keep breakdowns to a minimum and reduce or eliminate major repairs is like money in the bank. If you happen to own a large V-8 engine, you'll be especially interested in pampering it. Detroit has passed along the word that V-8's will be phased out and when this happens, there will be no runs continued for these engines and their conversion to marine use. When this happens, chances are your only alternative will be a diesel powerplant, probably at a price that will stagger you.

Record-keeping need not be unbearably time-consuming or a dreaded chore. In fact, if you can enlist the services of the family, it can even be fun . . . almost. But it will serve a worthwhile purpose. It can make hours on the water more enjoyable, less worrisome, and even safer. While I can't *guarantee* the boat that takes me out will bring me back, I certainly *expect* it to. And, somehow, I think my boat knows it, too.

THE AUTHOR'S RECORD KEEPING SYSTEM

BINDER I

Boat Manufacturer's Owner's Manual
Engine Factory Service Manual
Electronics Services Manuals
Troubleshooting Checklists & Tips

BINDER II

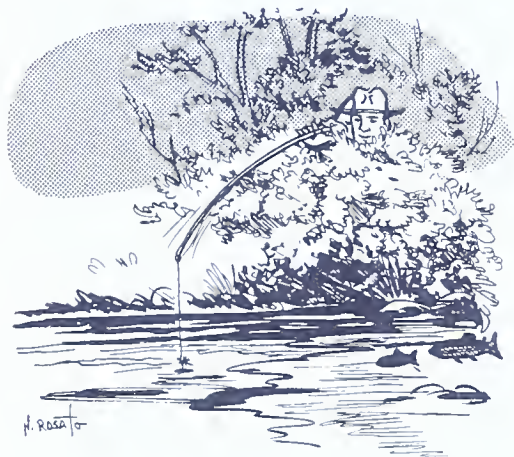
Start-up Checklist
Shutdown Checklist
Running Log
Radio Log
Gas Purchases Record
Maintenance & Work Log
Key Components Parts List

General contents of the author's two-binder record keeping system, carried on board during the boating season; reviewed and analyzed in-depth between seasons.

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

FISH FACT: Gills are the organs that supply a fish with the oxygen it must have to live. Blood of the fish circulating through tiny vessels in the gills absorbs dissolved oxygen from the water passing through the gills.



“Dapping” is an excellent tactic to use on trout that lie close along cut-under banks or along shores thick with vegetation. Stand on the bank after a cautious approach, with some kind of vegetation to hide you or stooped low to reduce visibility. Extend the rod with just the tip over the spot to be fished, with only part of the leader and the fly hanging between the rod tip and the water. Let the fly down on the water as lightly as possible and allow it to float with the current.

Fan-wing dry flies can be made in many patterns, not only the very popular Royal Coachman. The Cahills, both light and dark, are particularly effective in the fan-wing style.

Brawling currents are poor places to fish with a dry fly, for trout feed most of the time well below the surface in such areas. Rapids are ideal water for nymphs, wet flies and streamers.

The faster the current and the more roiled the water, the larger the wet flies that may be used for either trout or bass.

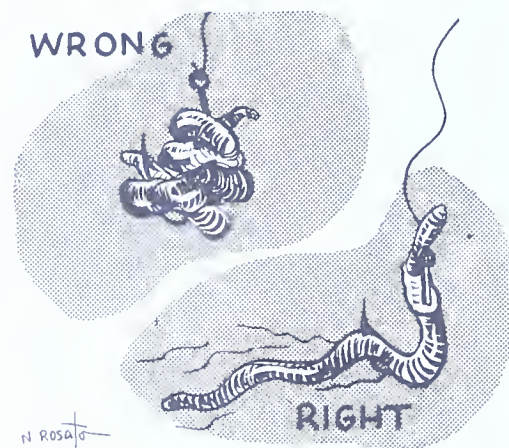
Scout the water carefully before you fish at night. You will be able to select the best fish lies and also to locate big rocks or drop-offs that can be hazardous in the dark.

Worms are cheap, so don't be stingy in using them. If a worm is nibbled off by a fish, or broken on a cast, put on a fresh one.

In fishing with wet flies for bluegills let the flies sink to various depths in the water, then move them slowly and smoothly. A retrieve that is too fast or that makes the fly behave erratically does not often get results. Bluegills usually take wet flies deliberately and are not inclined to chase them through the water.

Modern fishing gadgets, products of the age of electronics, will never replace knowledge of the water as a tool for successful angling in bass and trout streams. Knowing the oxygen content and temperature of the water and bottom features which cannot be seen by the naked eye may be important on lakes and man-made impoundments; but, the stream fisherman can read the water with his own eyes and can learn the nature of water areas that will attract fish, for either resting or feeding.

Insects are in the air and on the water; trout are feeding hungrily; you are using a good imitation but the fish refuse it. What to do? Try a contrasting pattern, hoping that the trout will single it out from the naturals.



Hook a worm only once or twice through the body at the collar back of the head. Never bunch a worm on the hook. The lightly hooked worm will be free to wriggle and move in the water. A bunched-up worm will be just a mass, inert and, more important, unattractive to fish.



How really to enjoy fishing: teach the art to your son or to the son of a friend or neighbor. One fish he catches will give you more satisfaction than half a dozen you catch yourself. Start him out with bait and as he learns to handle tackle initiate him into the fine sport of fishing with artificial lures.

Early in the season when the water is still cold use tiny spoons, small spinners and live baits, including garden worms. Comparatively few aquatic insects are in evidence at this time, although streamers and nymphs will take trout.

There is one easy way to get a sinking lure down to the proper depth in a current. Cast upstream and the lure will sink as the current carries it down. Depth in the water can be controlled by delicate tension on the line. If the lure is cast directly downstream, the pull of the line will hold the lure nearer the surface than the angler desires.

Fish on the surface with dry flies or near bottom with nymphs, wet flies and bait. Trout feed on floating insects on the top and on nymphs and other live forage on or very close to the bottom. They do not do much feeding in the “in-between” depths of the water.

Bluegill spawning beds along a sandy shore attract fishermen. But bluegills on nests in shallow water usually are small. Biggest bluegills will spawn in the same area but in deeper water. Try fishing for the “bulls” with wet flies, small streamers, or tiny spinners, in addition to live baits.

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Shad Season on the Delaware

PENNSYLVANIA

JUNE—1978

Angler

the
**Keystone State's
Official
FISHING·BOATING
Magazine...**

30¢

Single Copy



Wickins



EVERYONE MUST REALIZE:

That clean streams are an heritage of the people.

That no one has the inherent right to despoil the streams.

That streams are the source of drinking water supplies for 90% of our population and are therefore a leading factor in public health.

That clean streams provide wholesome and healthful recreation and therefore give the opportunity of greatest enjoyment of the great outdoors.

That clean streams are necessary if fishing is to be preserved.

That the cost of assuring clean streams is rightfully placed in the same class with charges made for any other public service—electricity, oil, gas, telephone, etc.

That no community or industry has the right to deprive the people of clean streams by using them as a dumping ground for sewage, wastes and refuse.

That to prevent pollution of the streams is a moral obligation and absolutely necessary for the public welfare.

**Ralph W. Abele,
Executive Director**

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

Published Monthly by the
PENNSYLVANIA FISH COMMISSION
COMMONWEALTH OF PENNSYLVANIA
Milton J. Shapp, Governor

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Volume 47 - No. 6

June, 1978

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ON THE COVERS

April brings the glamorous trout to the fore; May heralds the opening of the "big-toothed" season: the walleye, the musky, northern pike and pickerel. Then comes June; it's bass time. Somewhere along the way we've overlooked the scrappy little battler pictured on our front cover this month. His abundance throughout the Commonwealth and his willingness to cooperate with fishermen should make the rock bass more popular than he is. Late May and early June are great times to pursue the rock bass. Painting by Ron Jenkins.
Staff Photographer Russell Gettig took to the air to furnish us with, literally, a sky-high bird's eye view of the Linesville Fish Cultural Station on Pymatuning Lake. A good many of the muskies, walleyes and northern pike stocked throughout the state got their start in the incubation jars at this sprawling complex.

MONTHLY COLUMNS

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James F. Yoder, Editor

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"CLASSIC"

I hope you realize what a *classic* column Keith Schuyler turned out in the March issue, or better yet, I hope everyone realizes it and passes his copy around for all to benefit. Mr. Abele also said a lot in a few well-chosen paragraphs on the 200-mile limit.

JACK JONES
Feasterville

P.S. How about some photos around my old hometown of Dauphin! God's Country!

VIEWPOINT —

Enclosed find my check for three more years of *Pennsylvania Angler* which in my opinion is a very enjoyable magazine because of its varied articles and helpful hints on many subjects.

I was sorry to read in the January issue that the license increase has not gone through. I agree that the increased fee would still be a heck of a bargain because of the many benefits derived from this license; not only for the many varieties of fish which we can fish for but also the pleasure of being along a stream or lake and just fishing and enjoying nature.

I also would favor a reduced license for the youngsters because of the funds which would be realized from selling more license. Would also gladly pay a dollar for a trout stamp but then I would hope for fewer but large fish.

Many thanks for all your efforts on behalf of all fishermen.

GRANVILLE FREY
Bethlehem

LOADED FOR LUNKERS!

May a New Hampshire (former Scrantonian and Penn Stater) stick an oar in the water of the *Pennsylvania Angler*, hopefully to clarify a murky situation?

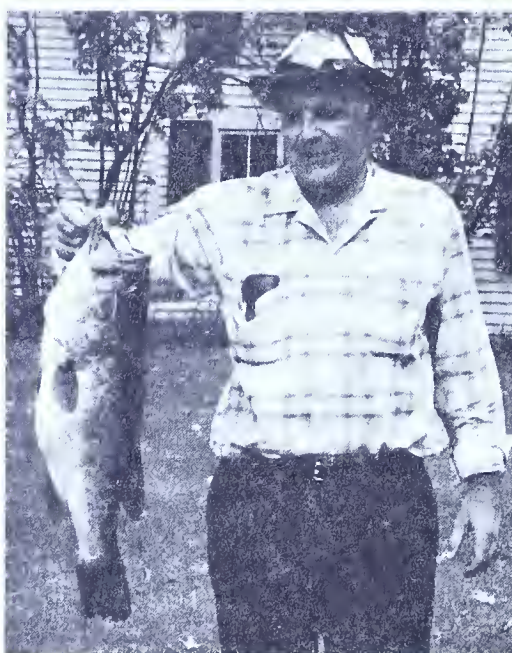
I notice frequent articles/letters about catching big fish on ultralight tackle and 4-pound-test line. I would recommend the opposite. Either an angler is lucky (no un-

derwater structures, just sand) or he is feeding us a line! In recent years I've gone from 8- to 10- to 12-pound line — I got tired of losing 6-7-8+ pound bass along with a lot of lures. Up here, at least, you've got to have some chance of controlling these big lunkers, otherwise they will invariably wind you around submerged logs, brush, weeds.

Over the decades I've fished a lot (including the Delaware and Susquehanna in 1977) and find most lakes, ponds and rivers have plenty of submerged cover for big fish. Better use matching gear for big fish!

PHILIP D. BELL, SR.
Penacook, N. H.

P. S. Just to illustrate, here's 2 snapshots — maybe either will print OK, of 7¼ and 7¾ pound-bass caught on 10-pound line near where I live here.



"CLAMOR FOR MORE"

I aim to "land" (not kill) a couple of fish (not birds) with this letter.

First: since my subscription to the *Pennsylvania Angler* expires in April, I would appreciate your directing this request for renewal (and the enclosed check) to the proper department for their action to cover the ensuing three years.

Second: since receiving your letter of approval dated November 22, 1976 I have transcribed into Braille 42 articles taken from your publication for a total of 484 pages of Braille out of 5406 pages of all categories since that date.

All have gone to the library of the School for Blind Children of Western Pennsylvania here in Pittsburgh, and they clamor for more. Hence my renewal. Of course, I like it too.

LANE JOHNSON, JR.
Carnegie

COLLECTOR'S CORNER

Pennsylvania Angler yearly wanted from 1956 to 1975. Please state price and issues available to:

GEORGE LAND
Herndon, Pa. 178

I've been getting the *Pennsylvania Angler* since the early 50's and I'm missing several copies to make my collection complete since then. Please let me know which back issues are available or where I can obtain back issues. I'm anxious to get missing copies. Thank you.

ROBERT RINKER
10 N. Madison Street
McAdoo, Pa. 18237

Editor's Note: Back issues of the *Pennsylvania Angler* are not available from the *Pennsylvania Fish Commission*. Any wishing to assist readers Land and Rinker are advised to correspond with the directly.

PLENTY LEFT!

Last year my father and I took a trip out to French Creek, in Chester County during the second Saturday of May.

Here is a picture of our combined catch. It consisted of 9 rainbows, 3 browns and one, 20-inch, 3-pound palomino that most broke my ultralight in half.

The strange thing about it is we have endless stretches of stream to fish all ourselves! It's not that we like crowds of anglers but we felt sorry for the hundreds of guys who are convinced that the majority of streams are fished out after April.

Well, here's proof that French Creek has a lot of fishing to be done in its waters long after opening day.

JOHN JUNGER
Oreland



I've just completed reading "Sampling Wayne County's Trout Waters" in the March 1978 Angler and I was surprised to find that the prohibition of using live minnows as bait at Upper Woods Pond had been lifted. Could you tell me when this occurred and if any bait restrictions remain in effect there?

I do have one other request. Would it be possible to publish a list of some of the trout waters in the York-Gettysburg-Chambersburg area and how to get to them. I am formerly from the Northeast Pennsylvania area and although now living in Virginia, I would like to continue my fishing in the state with the best thing by far.

NICHOLAS HINKO
Sterling, Va.

IS. Are there any maps available showing fishing spots and roads to them. I do have several county maps put out by the Fish Commission several years ago and I was wondering if they're still available.

The bait restriction was "lifted" during calendar year 1977; its absence is first noted in your 1978 Summary booklet. There are no other bait restrictions at Upper Woods Pond.

The maps to which you refer are out of print; our supplies are exhausted. However, a approved trout waters (for all counties) are listed in your Summary. Finding the streams and their "hot spots" we must leave to the individual angler — and rightfully so.

WHERE AVAILABLE?

In your September 1977 issue of the Pennsylvania Angler, the fly tying article had a cork-bodied ant. Could you please inform me as to where I can obtain round cork cylinders of 1/8 inch in diameter. Thank you.

ANDY LACKO
Johnstown

According to Charles Meck, author of the article, cork bodies are available from E. J. Hille, P.O. Box 269, Williamsport, Pa. 17701. It is our understanding that they will mail you a catalog of their full line of fly-tying components upon request. Ed.

TURNABOUT IS FAIR PLAY!

Your February "Notes from the Streams" really satisfied my desire for revenge. Especially the article titled "Incredible" by my old hunting and fishing buddy Cloyd W. Hollen, Assistant Supervisor, Northwest Region. It took that poor



BLACK SPOT

by Cecil R. Houser,
Benner Spring Fish
Research Station

Throughout the course of a year's time we receive many letters and calls from concerned fishermen and farm pond owners regarding diseased fish they have caught. Most often the disease's manifestations are caused by parasites which render infected fish aesthetically unpleasant. Of all the many parasites of fish existing today, the most common we find is known as "black spot," or "black grub" as they are commonly called.

The name is derived from a larval trematode parasite which imbeds itself in the skin and flesh where a black pigmented cyst is formed around it,

resembling pepper. It is found on the fins as well as the entire body of bass, sunfish, chubs, minnows and many other fish species. The mature parasite occurs in a fish eating bird, notably the Kingfisher. The life cycle begins when the adult parasite lays its eggs which are shed in the droppings of the bird and ingested by a snail host where it develops for a period of time (around 42 ± days). The snail releases a swimming stage known as a cercaria which seeks out the final host and penetrates into the skin and fins where it becomes encysted. The fish, in turn, is eaten by the final host, the Kingfisher where the parasite matures and thus the cycle begins again. Though a fish may be heavily infested, the parasite seems to do little damage in most cases. A massive infestation in young fish may cause excessive blood loss, physiological stress or even death. These parasites cannot infest man and even the heavily infected fish are safe to eat.

little duck to do to him what he did to me one day. The only difference is that the duck put Cloyd in buttfirst; Cloyd put me in headfirst.

Back about the time that Cloyd was only "dreaming" of becoming an officer for the Pennsylvania Fish Commission, he and I were happily enjoying the great fishing at the Fisherman's Paradise, Bellefonte, Pa. You were allowed to keep one fish those days, and as usual, old lucky Cloyd nailed a big brown right off the bat. Not having caught many big ones like I usually did, he decided to take his trout and quit, and finish his day up in the "Red

Zone" above the Paradise. Me, I decided to keep right after those big browns there in front of me.

Cloyd checked out as required, went to the parking lot, ate part of my lunch before driving my car up to the Red Zone. On his way up to the Red Zone, he parked on the road across the stream from me to inquire if I wanted anything to eat before he left. A fisherman was not allowed bread, meat, etc., that could be misconstrued as having bait in that area, so I asked him to throw me a banana across the stream. I thought that would hold me (continued on page 26.)

MEALS from the CREEL

by Arthur J. Michaels

SEVEN TIPS FOR FISH-EATING DIETERS

A jogger uses up about 9.75 calories per minute, a swimmer expends about eight calories each minute and a tennis player uses up about 6.5 calories per minute. There you are, out of the water — fishing — burning up only about 3.5 calories each minute.

With disappointing figures like these, and *yours* if you're overweight, you might be a dieter who thinks he's taken up the wrong summer activity. With so few calories expended while you're fishing, how can you manage weight loss in summer when the fishing is so good and when looking your thinnest in scant clothing is so desirable?

A depressing dilemma, isn't it? Well, cheer up! You *can* carry on weight loss as an angler, because dieting and weight loss have little to do with your choice of outdoor sport or exercise. Fact is, the keys to successful dieting are eating balanced meals and developing meal preparation skills that keep you thin.

Now is the time to go to bat on your summer fish-eating diet. So lead off with these seven tips to help you slash calories in preparing those fish meals without sacrificing their taste.

Tip #1: Eat more fish than red meats and you cut down on your in-

take of fat.

Anyone who favors fish over red meats has a clear advantage when it comes to dieting. Three ounces of sirloin steak contain about thirty grams of fat, while three ounces of flounder contain only about eight grams of fat. Many freshwater species are comparably low. That's why fish-eating dieters can have their fillets and eat them, too. Even "fat" fish, like smelts or mackerel, yield less fat than most red meat cuts.

Tip #2: Eat less butter. You're frowning right? Sure, fish meals and butter are made for each other, but you can get the taste of butter without devouring gobs of it. Let your waistline smile with this:

"BETTER BUTTER BET"

3 teaspoons gelatin (unflavored)
8 tablespoons diet margarine
4 ounces skim milk
1 teaspoon imitation butter flavoring
dash pepper

Pour the milk into a small saucepan and slowly add the gelatin. Let it thicken for a few minutes, then heat over a low flame. Add the diet margarine, imitation butter flavoring and pepper. Stir until the diet margarine melts completely.

Cook with this recipe, use it as a dip for broiled fish, or add it to other recipes that call for butter. Stash the leftover in your refrigerator.

Most so-called "diet" margarines are real margarines and butters diluted with water, so if the "Better Butter Bet" doesn't suit you, why not make your own "diet" margarine? Put four ounces of real margarine or butter in a blender, add four ounces of ice water, and whip. Presto! Home-made, diet margarine.

Tip #3: Besides butter, starchy thickeners add calories, so use agar agar as a thickener for soups and sauces.

Agar agar is a flavorless, natural seaweed gelatin which you can use as a no-calorie thickener. Sold in most health food stores, it's packaged either in brittle sticks or already flaked in jars. Use about half a stick per serving, more or less to suit your taste. Add the agar agar to the correct amount of milk or water in your soup or sauce recipe and heat over a low flame, stirring constantly. The

agar agar soaks up the warm liquid, softens, and then disintegrates, but you won't know it's doing the job until your sauce or soup is ready for serving — the agar agar will thicken your dish at the table as it cools for serving.

In your *Pennsylvania Angler's Cookbook*, try agar agar in place of flour for White Sauce, Herb Tomato Sauce, Egg Sauce for Baked Fish, and Curry Cream Sauce (pages 157-159).

(Editor's Note: this is tip #3.5. The *Pennsylvania Angler's Cookbook* is available for \$2.50 from the Pennsylvania Fish Commission, P.O. Box 1673, Harrisburg, PA 17120. Checks or money orders, please.)

Tip #4: Get off your halophylic high horse. For the dieting fish-eater, this means eat less salt.

Last year, the report of the Senate Select Committee on Nutrition and Human Needs recommended that Americans reduce their salt intake to about three grams per day. That's about half a teaspoon, and many people consume ten to fifteen times that amount every day! Besides its role in cases of hypertension, migraine headache and cardiovascular disease, salt is a dieter's "no-no" because it retains water.

Furthermore, studies show that salting food is an acquired taste rather than a biological need. So if a recipe calls for salt, add it when you're preparing the food, not at the dinner table.

And don't salt ocean fish at all — their briny habitat insures their high salt content. Try seasoning ocean fish with a spritz of lemon juice instead of salt.

In addition to ocean fish, processed foods, delicatessen foods and smoked or cured foods all contain lots of salt. Instead of dousing these foods with extra amounts of salt, season them with other herbs and spices like basil, marjoram, thyme, oregano, chives, and curry powder.

Many dyed-in-the-wool fish-eating dieters replace their saltshakers at the table with a small container filled with equal amounts of basil, thyme, oregano, and marjoram. You can combine herbs and spices that suit your taste and store the combo at the dinner table in a small bottle with a plastic shaker top. For this replacement, small shaker-top bottles for grated cheese or minced onion work



perfectly.

Tip #5: You can fry fish as much as you like, but steer clear of batter-fried fish. Most batters contain some kind of flour or bread crumbs and these carbohydrates add calories. Try any batter you like without the flour and you're back in business.

Tip #6: Substitute skim milk or powdered nonfat dry milk for whole milk or cream in your fish recipes. By comparison, one quart of skim milk contains 300 calories and 40 grams of fat, less than a quart of whole milk. This replacement will cut your caloric intake just as eating more fish than meat will.

But, compared to the taste of "real" milk, you're not alone if you think that powdered milk tastes like chalk and that skim milk tastes like glue water. When you make powdered milk, add an extra level teaspoon to each pint for a richer taste. And if you buy skim milk, you can get the best-tasting stuff at local "farm" stores that specialize in bottled milk.

Nondiet Version

For This:

One cup milk
3 tablespoons flour
3 tablespoons butter
½ cup catsup
2 tablespoons Worcestershire sauce
garlic
dash salt and pepper

FISH SAUCE

Diet Version

Substitute This:

One cup skim milk
One stick agar agar
3 tablespoons Better Butter Bet
1 cup vegetable juice
2 tablespoons Worcestershire sauce
garlic
dash salt and pepper

To prepare the diet version of this Fish Sauce recipe, pour the vegetable juice and Worcestershire sauce in a saucepan and heat to boiling. Lower the heat, simmer until the liquid is reduced to half its original amount (about 30-40 minutes), and set aside to cool. Rub garlic over the inside of another saucepan and heat the skim milk over a low flame. Soak the stick of agar agar in the warmed milk and gently break it up with a spoon until it's disintegrated. Add three tablespoons Better Butter Bet (or your own diet margarine), dash salt and pepper, and reduced vegetable juice

and Worcestershire sauce. Heat over a low flame (don't boil), stirring constantly. Serve immediately.

Tip #7: Whether you're on the water fishing, in your kitchen, or at the dinner table, there is a final consideration for the dieting fish-eater. "Dieter's agony" is an acute feeling of being cheated out of nondiet foods, and it could be a major contributor to your going off a diet. These tips are designed to help relieve your "dieter's agony," but no diet works without the immovable, invincible and undaunted strength of good old will power.

Bait Up

by Don Kingery

illustrated by

Ray Piccolin

TADPOLES

Tadpoles, the immature aquatic stage of a frog's life cycle are superb bait for large muskellunge, walleye, and bass. They are vegetarians, so look for them in weedy ponds and riffles with lots of algae. Walk through the algae and you will flush several. Watch where they hide and catch them by hand or with a dip net. They can also be taken with a minnow seine. In deep ponds, use a garden rake to bring up clumps of weeds, or drag netfuls of algae up from the bottom and sort through them.

Tadpoles are fragile creatures and must be kept in cool, well-oxygenated water. They should be handled as little as possible. Keep them in a minnow bucket with some ice cubes. The type of bucket with a papier-mache liner is best as it helps cool and aerate the water. To keep tadpoles for over a week, put them in a cage under water, in jars of water in the refrigerator, or in an aquarium. Feed them lettuce or aquatic weeds and they will thrive.



Tadpoles can be hooked through the lips or through the tail and, although they will take fish when used on a bobber, they produce better when fished *deep*. No weight is necessary as their natural tendency is to head for the bottom. Tadpoles also make good skittering bait. Use a

two-hook harness for the large ones — one for the lips, and one for the tail.

FROGS

All types of frogs can be used as bait. Green frogs, tree frogs, leopard frogs, pickerel frogs and small bullfrogs are all excellent. Collect them along the shores of brooks, streams, lakes, ponds and swamps with the aid of a net or by hand. An excellent and enjoyable method of collecting frogs along high-banked waters is to use a cane pole or fly rod and a small hook with a leaf or blade of grass on it. A piece of red flannel is traditional but grass works just as well and is usually handier. Crumple the grass blade or leaf and thread it on the hook. Dangle this in front of the frog's nose and set the hook with a quick flick of the wrist when he takes it.

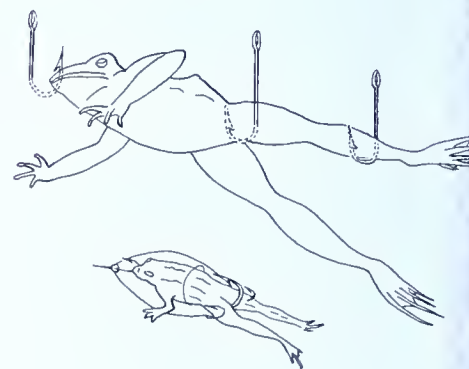
Frogs can be kept for several days in a box or can with damp moss, leaves or grass. To keep them longer, put a little crushed ice in with the moss. In warm water keep them in a cage partly submerged in water but provide rocks or something else for them to perch on. Frogs will stay alive for over a month in a cold refrigerator. Just make sure they have air and don't let the temperature drop below forty degrees Fahrenheit. The cold slows down their metabolic rate, producing an effect similar to hibernation. Needless to say, frogs can also be kept in a terrarium. Feed them insects, earthworms, or bits of meat. Never keep frogs in a bucket of water because they will soon tire of swimming and drown.

When fishing, you can carry frogs in an old nylon stocking with some damp moss, or you can make a frog box. Take an old bait box or any wooden box and remove the top. Then, using the top as a model, cut a section of old innertube to the same size. Tack the piece of inner tube over the box, pulling it snug, but not too tight. Next take a sharp knife and make a straight cut through the center large enough for you to get your hand through. This allows you to reach inside and remove frogs one at a time without letting the others escape.

If you wish to raise frogs, you'll need a small pond. It doesn't have to be deep, but it must have water year-

round or the frogs will leave. Frogs normally spawn in the spring. Their eggs are encased in gelatinous masses and will be found in the shallow areas of ponds and swamps. Gather several clumps and dump them in your pond in about six inches of water. Most frogs develop from egg to adult in one season; bullfrogs, however, take two years to mature.

There are several methods of hooking live frogs. The one to use depends on how you intend to fish them. For casting, hook frogs through the lips at the tail end. I personally favor lip hook because every bass I have taken on a live frog that still had the frog in its mouth had invariably turned the frog and swallowed it head first. This gets the hook past the tough cartilage and down where it can do the most good. Many still-fishermen simply hook frogs through one back leg and let them swim around. For trolling or skittering, make or buy a frog harness. This usually consists of a large lip hook and two smaller leg hooks to catch short strikers. When skittered and trolled, frogs work equally well either dead or alive.



When a frog dies, don't throw it away. Hook it through the lips, cast it into the lily pads and retrieve it with short, sharp jerks mimicking the frog's natural swimming motion.

Never use a bobber with live frogs; just let them swim about freely. It doesn't matter whether they stay on top or go deep, any bass, big trout, pike, pickerel, walleye, or muskellunge in the area will find them.

Dead frogs can be preserved for future use by freezing or packing in alcohol. Incidentally, when collecting, don't pass up bullfrogs too big to use as bait — eat them yourself. Cut through the skin around the waist and pull it down to skin the legs. Dip the legs in butter, roll them in flour and fry. Save the skin — when fresh, it

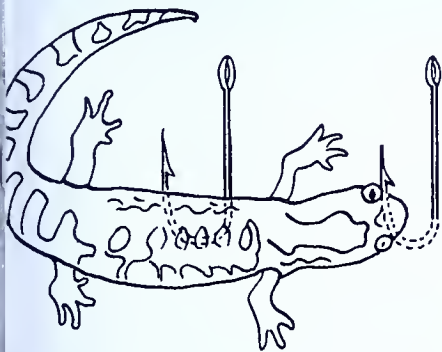
of the best skittering baits you can find.

Now is a good time to mention toads. Generally they don't produce much at all; in fact, the only measurable amount of success I have had, has been with skittering them. Since they resemble frogs, you'd think they would be superb bait, but toads seem to give off a scent which fish don't like.

SALAMANDERS

There are many types of salamanders in North America, but few exceed six inches in length. The Hellbender (*Cryptobranchus alleghaniensis*) of the eastern United States is the most common exception to this rule. It often attains a length of fifteen inches.

The aquatic species are most easily taken with a dip net at their breeding ponds. Some of the nonaquatic salamanders may be collected by overturning logs, stones and debris in ponds. Many will be found under flat rocks along small streams and can be caught by hand. Care for and keep them just like you would frogs. In an aquarium, feed them snails, slugs, insects and earthworms.

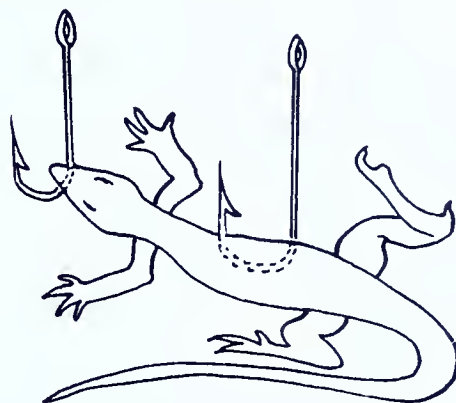


Hook salamanders through one lip, the nostrils, or under the skin on the back (the tails have a tendency to break off) and fish them just like frogs. Like toads, some salamanders give off a scent which is distasteful to fish while others are avidly taken. Collect a wide variety and experiment with trial and error to find which ones are acceptable in your area.

NEWTS

Newts or efes, as the adults are known, are closely related to salamanders but seldom exceed five inches in length. Young newts breathe through gills and are totally aquatic.

The adults develop lungs and become terrestrial but must return to the water to breed. This is the best place to collect them. In the spring look for them around shallow ponds with lots of aquatic growth. Later, towards summer, seek them under leaves and debris in wooded areas.



They should be cared for in the same manner as frogs and salamanders. Newts have very soft skin and are best hooked through one lip or the nostrils. They are only hooked through one lip to allow them to open their mouths to breathe. For this reason both salamanders and newts should be brought to the surface every five minutes or so. Fish them as you would frogs.

LAMPREYS

Often mistaken for eels, lampreys are not fish. They lack a true backbone, having their spinal column composed of cartilage instead of calcium. Adult sea lampreys (often attaining a length of three feet) migrate to the oceans where they parasitize fish, returning to freshwater streams only to spawn. They are the type that entered the Great Lakes through the Welland Canal and all but wiped out the lake trout. Freshwater lampreys, on the other hand, spend their entire life cycle in freshwater. Of these, the types most commonly used for bait are the brook lampreys. These are harmless species, seldom exceeding eight inches in length.

Lampreys spawn in clear streams and brooks. The male and female scoop out a shallow nest in the gravel bottom, deposit the eggs and then die. The eggs hatch into small, blind, toothless larvae. These larvae are burrowers, living in the sand and mud of the stream bottom for up to three

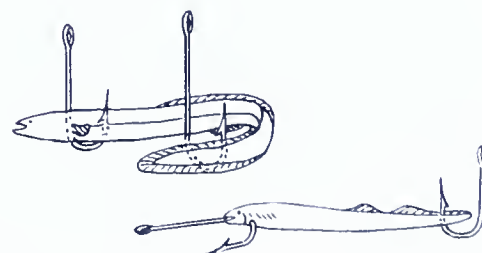
years before maturing. Once the adult stage is reached, nonparasitic lampreys do not feed, living on stored energy until they spawn and die.

Collect the worm-like larvae by digging up the bottom in muddy, shallow areas with a garden fork and catching them with a net or seine. They can be kept alive by using the same techniques you use for keeping minnows. Hook them through one of the gill openings, through the tail, or put them on a worm harness. Lampreys are an exceptionally tough bait and will take a lot of abuse. They can be drifted, trolled, cast, still fished, or skittered. A lamprey on the bottom is a killer for walleyes.

EELS

Freshwater eels are only found in the streams of eastern North America and Europe. They have a backbone and are considered true fish. Eels often grow to a length of six feet and have an unusual life history. The mature adults migrate from their freshwater streams to the portion of the Atlantic Ocean around Bermuda commonly known as the Sargasso Sea. It is here that spawning takes place, each female depositing upwards of ten million eggs and then dying. The eggs hatch into small, flat, transparent larvae which start to migrate towards their freshwater homes. Their trip will take over a year, during which they will grow and begin to resemble typical eels. When they reach their freshwater goal they will be about three inches long. These young eels are commonly called elvers. The females will continue to head upstream, often going far inland, while the males remain and mature in tidal waters.

The elvers are most often taken in seines or minnow traps. They keep well in jars of water in the refrigerator or in an aquarium. Feed them aquatic insects, worms or small minnows. Hook elvers through the tail or lips and fish them as you do minnows.





My friend, Lee, with a husky largemouth bass and the little fly rod popper on which he caught it.

“See those two stumps about 50 feet on the right?” asked my friend, Lee. “I’ll bet there’s a big bass hiding between them. Let’s see if he likes my bug.”

We had worked our boat very carefully deep into a corner of a little lake, into a veritable jungle of sunken tree limbs, rotten stumps, lily pads and weeds.

We were *stalking* largemouth bass, with fly rods and plastic-bodied bugs. The stumps that Lee had spotted were about three feet apart and for a short distance around them the water was clear of obstructions.

“You’re nuts,” I told Lee. “Even if you can land your bug between those stumps at this distance, you’ll notice that between this boat and the stumps are three sunken logs, a couple of feet apart and just under the surface. How do you expect to get a hooked bass over those logs and within reach of the landing net?”

Lee ignored my question. Standing in the bow of the boat, he false cast until he had enough line out to reach the target, then dropped the bassbug neatly between the stumps, let it lie quietly a few seconds, then gave it a gentle pop.

The water erupted, the bug disappeared and the tip of Lee’s rod bent in a half circle as he held it high and stripped in line with his left hand, trying to hold the fish high in the water. Quickly he worked the fish over the most distant of the three sunken timbers, then over the second. Then the fish turned the tables, dived under the nearest sunken log and hung up solidly. There was a furious thrashing of water and the line went slack.

We had seen the bass plainly enough to estimate its weight at two or three pounds, and Lee had a grin a yard wide on his face as he retrieved his lure.

“Well, anyhow, I tried,” he said,

“and that was a beautiful bass. He’ll be there the next time.”

Lee and I have spent many hours day and night, *stalking* largemouth bass. *Stalking* is the precise word to describe the method. It means sneaking up on largemouths in their home waters and in the precise spots they choose for resting and feeding. Success depends largely on knowledge of the habitat and habits of the bass.

It is surface lure fishing, most of the time with fly rods. Casts must be made with pin-point accuracy, distances of 30 to 50 feet, for the target areas are small and confined. Selection of lures that will attract, and not frighten bass is essential; and, once a lure has landed on the water surface, it must be made to look alive, imitating a crippled minnow, a frog, or a big bass that has toppled from a lily leaf, a weed stem or the side of a stump.

The rod must be stiff enough and the leader strong enough to hold

"Stalking" the Largemouth

by Richard F. Williamson

comes out of the weeds into which it strikes when it feels the restraint of the hook in its jaw. And all this after the angler has made a slow, careful approach to his target. The angler may decide, if water conditions permit, but most of our stalking is done from a small boat paddled as quietly as possible from target to target. A canoe is a good stalking vehicle, although not as comfortable as a flat-bottomed boat. Even a relatively quiet electric motor could put the bass down in the type of water we fish, and would hang up on the stuff over which our boat glides.

A largemouth bass is not a fussy eater. It eagerly consumes all manner of live bait, as well as small water snakes, squirrels, mice and almost anything smaller than it is. I'm not exaggerating! One day I watched a wide clean largemouth bass of about five pounds. In its stomach was a small but fully furred squirrel.

Nobody can exactly chart the feeding time of the bass. It feeds both day and night, whenever it is hungry and feels the urge, or when something angers it and arouses its fighting instinct. Dawn and dusk are probably the most common feeding periods during the daylight hours. The night angler has learned to stay on the water from dusk to dawn, confident that the bass will begin feeding at the time during this period.

The largemouth prefers lakes, ponds, reservoirs and large, quiet pools, with slowly moving water, in rivers and large creeks.

Cover that protects it from its natural enemies is its prime consideration, for the largemouth spends more time resting than feeding. The places in which the largemouth always is close to deep water and other cover in which the fish finds safety.

The largemouth likes to hide in the shadows of drowned tree stumps,

sunken logs, big rocks, the tops of fallen trees, lily pads and thick weeds. In all areas, it stays back in its cover and if that cover casts a bit of shade on the water, all the better. No bass stays in open water for long under bright light.

Cover also helps the largemouth to satisfy its hunger. It is not shaped well to race in pursuit of a swiftly moving minnow, so it feeds from ambush, moving out of its cover to seize food, then returning to its place of safety. Also, the debris around which the largemouth hides attracts minnows and small bluegills and perch and insects of a wide variety.

In rivers and large creeks, the largemouth spends much time close to the shoreline, where there is heavy grass or weeds, but also prowls pools that have rocky bottoms and ledges.

Lakes and ponds provide the best stalking water. In these there are areas where lily pads form "islands" on the surface, where weed beds grow profusely and where stumps of downed trees and fallen tree limbs are most likely to be found. In most lakes there are coves and pockets where these conditions are found. The very best stalking areas are those so littered with debris that often it is extremely difficult to maneuver even a flat-bottomed boat into position for casting.

But in spite of the stumps, the lily beds and the weeds, there are patches of open water that deserve careful attention. There are weeds and other debris in these open areas, too, but they are below the surface of the water and feeding bass cruise over and through them.

Now and then, when the bug alights on this quiet water, we get an extra thrill. From three or four feet away, a bass will move deliberately to the lure, so close to the surface that its body creates a wake. It takes steady nerves to let the lure lie quietly until

the bass takes it.

Sometimes the lure frightens the bass no matter how delicately it is cast, and the fish makes a small wave in the water surface as it leaves the spot. I remember one fish that swam out of a quiet nook into a narrow waterway between two patches of heavy weeds. The fish moved slowly and I felt that it had not been unduly alarmed, so I let the lure lie quietly on the surface for at least a minute, then gave it a very light twitch. That bass rushed back into the open water and took the bug with a smash. Apparently, it had only retreated to cover, began watching the lure and could not resist smashing it when it showed signs of life.

Sophisticated bass fishermen would talk about "structure" of such water. Don't be baffled by the term. Structure is anything in water that provides protection and feeding stations for bass. It can be large or small beds of lilies, dense growths of weeds along shorelines or beds of weeds with their tops just below the surface. It can be a shoal in deep water, little islands, stumps, trunks of dead trees that have fallen into the water, and even docks and piers.

Shorelines can give clues to underwater structure you cannot see. For example, a steep hill at the side of a lake is a sign that the sharp dip continues underwater. Where the shore is flat or descends on a gentle slope to the water's edge, water depth increases on the same gradual scale.

Largemouth bass can be stalked by night as well as by day, but the angler has to adapt. By daylight the angler can see to place his lures in the hot spots, even if some of them are no more than a yard or two in diameter. He can drop a floating fly rod lure into a pocket beside a stump or a bit of open water in a lily bed, or under overhanging tree branches, or against a brushy shoreline. He will be doing

his most concentrated fishing at dawn and dusk.

At night, even under a bright moon (which some anglers despise) no such precision casting is possible. But surface lures can be cast along the edges of good cover such as weed beds and lily pads, which usually are large enough that the angler can see them even on a moonless night.

By day, the bass stays in or very close to its cover, emerging only briefly to feed or take a lure. At night, however, bass move into the shallows to feed. Under the protection of darkness, they cruise almost boldly, occasionally hitting a lure almost at the wading angler's legs or at the side of a boat. The angler does not have to get his lure into the cover to reach the bass . . . the bass comes out to meet him.

Fishing with a fly rod is the most productive method of stalking bass in the daylight, but the angler must take it easy.

Wade or move a boat or canoe very slowly and quietly from one likely spot to another. Cast to the edge of grass or lily pads, and work the lure parallel

to the cover, so the bass sees it pass close to his hideaway and does not have to chase it out into open water. Get back to open spots and clear lanes in dense growth. Get the lure right beside a rock or stump and back under overhanging trees or shoreline bushes.

Fish deliberately and slowly. A good tactic is to let the bug lie quietly on the surface for half a minute or so, then twitch it very, very gently and start it "swimming" slowly on the surface. Stop the bug, twitch it again, and repeat the slow swim, following this sequence until the retrieve is completed.

Frequently a largemouth bass will hit a lure the instant it touches the water, as if it had seen its approach, but more often it will follow a delicately retrieved lure for some distance, giving it a thorough inspection, then strike it viciously as it is moved slowly after a short pause.

Keep your line under control at all times. Retrieve line with the left hand, and keep the tip of the rod pointed at the lure. A line in which there is no slack makes it easier to set the hook

in the tough mouth of the bass and keep it out of the weeds it will attempt to reach.

Largemouth bass can sense even light vibrations in the water, and they have good vision. So the action, size and shape of the lure are more important than the color.

Whatever the lure you use, it must deceive the bass into thinking that it is natural and alive. Your lure must flutter, or quiver and struggle on the surface, or make desperate attempts to escape, or swim erratically just under the surface. These are the movements of natural bass forage.

Only if the delicate approach fails should the angler create more of a disturbance with his lures, in the hope that the fuss will draw bass out of thick cover.

In hard-fished waters, lures of small and medium size are much more effective than the larger models. Plugs, spoons, spinners and bucktails and streamers are good lures for largemouth bass in uncluttered water, but, in areas where the stalking game is the most fun, any lure traveling just under the surface would get snagged



This is largemouth haven! Stumps and fallen tree limbs with weeds nearby provide cover that attracts bass. A fly rod lure, dropped delicately and worked carefully right up against such debris will often bring some smashing strikes.

The outer edges of lily pads are prime areas for largemouth stalking. The fish like to hide in the shelter of the pads and will react to a small lure placed within easy reach of them. Quite often a pickerel or panfish will be taken here.



ry quickly. So surface lures are the
ols for this type of fishing. Even
aters will pick up bits of floating
ed and need to be checked fre-
ently and kept clean.

Bassbugs with cork or plastic
dies three-quarters of an inch or an
ch long, with hair or feather dress-
gs at the head or tail, are top fly rod
res. These land delicately on the
uter surface, float high and dry and
e easy to manipulate. Big deer hair
ssbugs that imitate frogs or mice
so are effective at times, but not as
requently as the smaller lures. Trout
y flies, such as the bivisibles, in
rge sizes, also are good surface
res. Bucktails and streamers can be
ed only under special conditions, in
eas where the water is compara-
vely free of obstructions, but even
ere they must be kept just under the
urface. Other lures worth trying are
pork chunk on a weedless hook, a
ating plastic worm five or six inches
ng, a weedless spoon with fluttering
ork rind attached, and rubber
iders. These latter have bodies of
bber, with four or six rubber legs
tending an inch or so on both sides.

These spiders are basically bluegill
lures, but I have taken largemouth
bass up to two pounds on them.

We make most of our own surface
lures. We prefer cork to plastic for
bodies and use deer body hair for the
larger bugs. We use bullet shaped
corks three-quarters to one inch long
and attach them to hooks large
enough to provide plenty of hooking
space between the point and the body
of the lure. The bugs are dressed with
hair or feathers at either the head or
tail and often with white rubber legs
about an inch long. Orange and yellow
are our preferred body colors, but the
color of the dressing seems to make
little difference.

The rubber spiders are made by ty-
ing small, shaped rubber pieces to
light wire hooks, with two or three
thin white rubber legs on each side, at
the head.

The bodies are sponge rubber cut in
various shapes. The tyer may cut his
own, but this is a tedious job, and it is
recommended that the bodies be
purchased from a fly-tying supply
house. The average cost is 35 cents for
10, and the bodies are available in

floating or sinking types and in a va-
riety of colors. White, black, yellow
and orange are good colors. The rub-
ber body may be cemented to the
hook shank, or the hook may be
threaded through the body.

Ordinary rubber bands are too
thick and heavy to make good legs.
So-called "rubber hackle" is thin,
black and white, and costs about 25
cents for five yards. It can be ce-
mented to the bottom of the rubber
body or tied on the hook shank
between the body and the eye of the
hook, so that two or three "legs" at
least an inch long extend on each side
of the body.

Surface lures also are best for night
fishing for largemouths. Jigs, sinking
spoons and diving plugs pick up too
much debris and hang up too often.
Effective lures float when at rest,
lightly disturb the surface when
twitched, and at the most go a very
short distance under the surface on a
fast retrieve. Minnow shaped floaters
that can be made to act like crippled
minnows are good. So are plugs that
paddle over the surface when
retrieved, floating plugs with small

spinners at head or tail or both, and lures that look like open safety pins, with a spinner blade on a shaft over the body of the lure, if they are retrieved high in the water. A small plug that will dip lightly in the water when retrieved slowly, then pop up to the surface when the retrieve is stopped, is quite effective. All of these night surface lures provoke the most action when they are worked slowly and quietly.

Selection of a rod, reel and line for largemouth stalking is important. A fly rod eight and one-half or nine feet long with fairly stiff action is ideal. It makes long casts easier and has the power to set the hook and control the bass. The line should be a floater, of course, and matched with the rod. A double taper line does a good job. The leader should be nine feet long, with a tippet strength of about four pounds, or OX. The spring of the fly rod will help control a hooked fish even when a fairly light leader is used.

For night fishing we prefer spincast outfits. A good rod is one five or six feet long with good backbone. Open-face spinning reels are difficult to use in the dark, and an unseen little wrinkle in the line can cause a backlash on a casting reel. So we used closed-face spinning reels. The lines are monofilament of 10- or 12-pound test. This outfit can sink the hooks in a largemouth and keep it under control, out of weeds.

Lee and I have a lot of fun stalking largemouth bass. For every fish we kill, we return two or three to the water, knowing they will be there another time. Rarely does either of us kill a six-fish limit, even when the fishing is great. But we do keep enough to give us some fun after the fishing is done.

We cut a fillet from each side of a bass we intend to eat, remove the skin from the fillets, then smoke the flesh. But first we let the fillets stand overnight in water in a refrigerator. To each quart of water used we add one-half cup of salt and one-half cup of sugar.

Our smoker has three wire racks for fillets, with a removable pan under the racks in which wood chips are reduced to ashes by the slow heat of an electric griddle under the pan. Just ordinary wood chips will not do. They should be very fine bits of cherry,



Some of the author's favorites: a jointed surface paddler, a spinner bait, a minnow type darting lure and a rubber-skirted surface "disturber."

hickory or other aromatic woods.

Because of the low heat, it takes three or four hours to cook the fillets, which are ready to eat when light brown on the outside and snowy white inside. It may be necessary to refill the chips pan three or four times in the process.

Fillets may be smoked on a backyard grill, of course, but aromatic wood chips should be used instead of ordinary charcoal. The cooking time

will be shorter because the heat will be much greater.

We eat the fillets without benefit of knife or fork since somehow they seem to taste better that way. If some are uneaten, they go into the refrigerator to provide tasty cold snacks later. Bass fillets, skinned and smoked, are as much fun to eat as largemouth bass are to catch in the midst of a successful stalking expedition!

Fly rod lures that will catch bass: center bug is the deer hair bug, other lure bodies are either cork or plastic — note rubber legs on some.





BOOTS! BOOTS! BOOTS!

by Leo A. Bressler

There is no doubt that boots and waders are a boon to the serious stream fisherman. Used sensibly, they can make the difference between a proper, successful approach to a feeding fish and a frustrating failure. Used foolishly, they can also be a bane . . . not only to the wearer but also to those fishing near him. The wading antics of certain fisherman have probably stimulated more malevolent and profane impulses in me than any other facet of angling. And I am certain that I am not alone in this.

The most irritating types of waders fall into three categories. The most common one is the *Compulsive Wader*. He is the fellow who figures that since he is wearing boots, he must wade; he will fish from the bank only if the water is too deep to wade. Whenever possible, he will slog through the stream, going right down the middle and often standing directly in the middle of holes most likely to hold fish. Like a barefoot youngster joyfully splashing through the gutter after a rain, this fellow crisscrosses the stream at random for no apparent reason except that he enjoys his inability to travel through water without getting his feet wet.

The *Shuffler* fishes downstream, dragging his feet, turning over stones,

scraping up sand and muck, giving advance notice of his approach by the streaks of muddy water, assorted debris and sound vibrations he sends downstream.

The *Spoiler*, either out of ignorance or out of sheer orneriness, plunges into pools or riffles as close as possible to another fisherman who seems to be having success. Most fishermen have had unfortunate experiences with the *Spoiler*. One encounter with him that raised what few hackles I have left occurred on upper Spring Creek in Centre County. I knew that a good trout customarily fed at dusk at the foot of a pool below a small falls. I purposely began fishing about half a mile downstream from the pool, intending to try the spot when chances for success were best. As I approached the pool, I could dimly make out the figure of a man in the vicinity of "my" spot.

When I got within fifty feet of the man, I saw that he was standing in the very place at the foot of the pool where the fish I was after generally rose. The man, who was old enough to know better, was frantically whipping his dry fly upstream into the white water below the falls, where it was immediately swallowed up by the strong current. Needless to say, I left without any of the friendly talk that fishermen engage in when they meet.

A few weeks later I was compensated somewhat for this irritating

experience by an incident on Penn's Creek. A dry-fly fisherman was gingerly making his way across the stream, casting toward the opposite bank, where trout were dimpling the water. Although he needed only about a 30-foot cast to reach the feeding fish, he continued to inch forward despite the fact that the water was only a few inches from the top of his boots. Suddenly he stepped into a hole, lost his balance and, for a few seconds, experienced a self-baptism. Uncharitable as it may seem, I admit that I thoroughly enjoyed the man's wallowing and sputtering. It was nothing personal; it was simply that I couldn't help focusing all my animosity toward foolish, purposeless waders upon this unfortunate fellow.

I suppose there isn't much that can be done about these wanton waders. Most, I should like to think, simply don't know any better. They are the unwitting products of the "hatchery trout age." They have never fished for wild trout, crawling on hands and knees to approach a shy brookie in a mountain rivulet or cautiously making their way to a spot on a low, clear stream from which they could drop a fly without spooking a wise old brown trout. Perhaps their number could be reduced if fishing clinics included clear and specific instructions on how, when and *when not to wade*, as well as on good manners in angling . . . and anglers heeded the advice!

Light Cahill on the Lehigh

by Tom Hart

“**T**here’s not much water in the creeks, not enough to float your bait,” protested Tom McAndrew on my suggesting a trip to the Lehigh one fine clear morning in late June.

On hearing that I’d been averaging two or three nice trout on each of my numerous visits to the river since opening day, he wavered and finally consented to go along on a jaunt which embarrassingly became the first time the Lehigh had “skunked” me last season.

The day turned out to be brassy bright and hot with the river unseasonably low and clear. The trout just weren’t taking. I was fishing the usual wet flies while Tom, an astute bait man, was attempting to entice the finned quarry with worms. Our fishing site was the stretch of river downstream from Dutter’s Farm to which we’d hiked over the hill from the Thornhurst Road.

Using a 7½-foot fiberglass rod for this part of the river, I tied on a No. 8 Light Cahill wet with a No. 10 March Brown for the dropper on an eight-foot leader tapered to 4x. While the Cahill hadn’t previously been a prime favorite of mine, the trout seemed to savor it this past season. On an earlier trip, in opening one of the first trout taken with it, I’d found among the stomach contents a yet undigested stone fly nymph which bore not a little resemblance to the artificial, so I’d stayed with the Cahill as the tail fly because of my newfound confidence in it.

I use the larger wets because I feel they are attractive to large trout in big water. The hatches, it seems to me, are too sparse and too far between these days for productive use of the floaters. Furthermore, I dislike taking time to carefully dress a dry fly, false cast it and make a good presentation only to have it snapped up and mangled by a chub or a small bass.

On this summer day prospects appeared promising enough at the outset when I barely missed a strike in the fast run above the bend pool down from Dutter’s. That bungled strike, however, was to be the extent of the trout action for most of a day on which the monotony was broken only by some suicidal-minded fallfish.

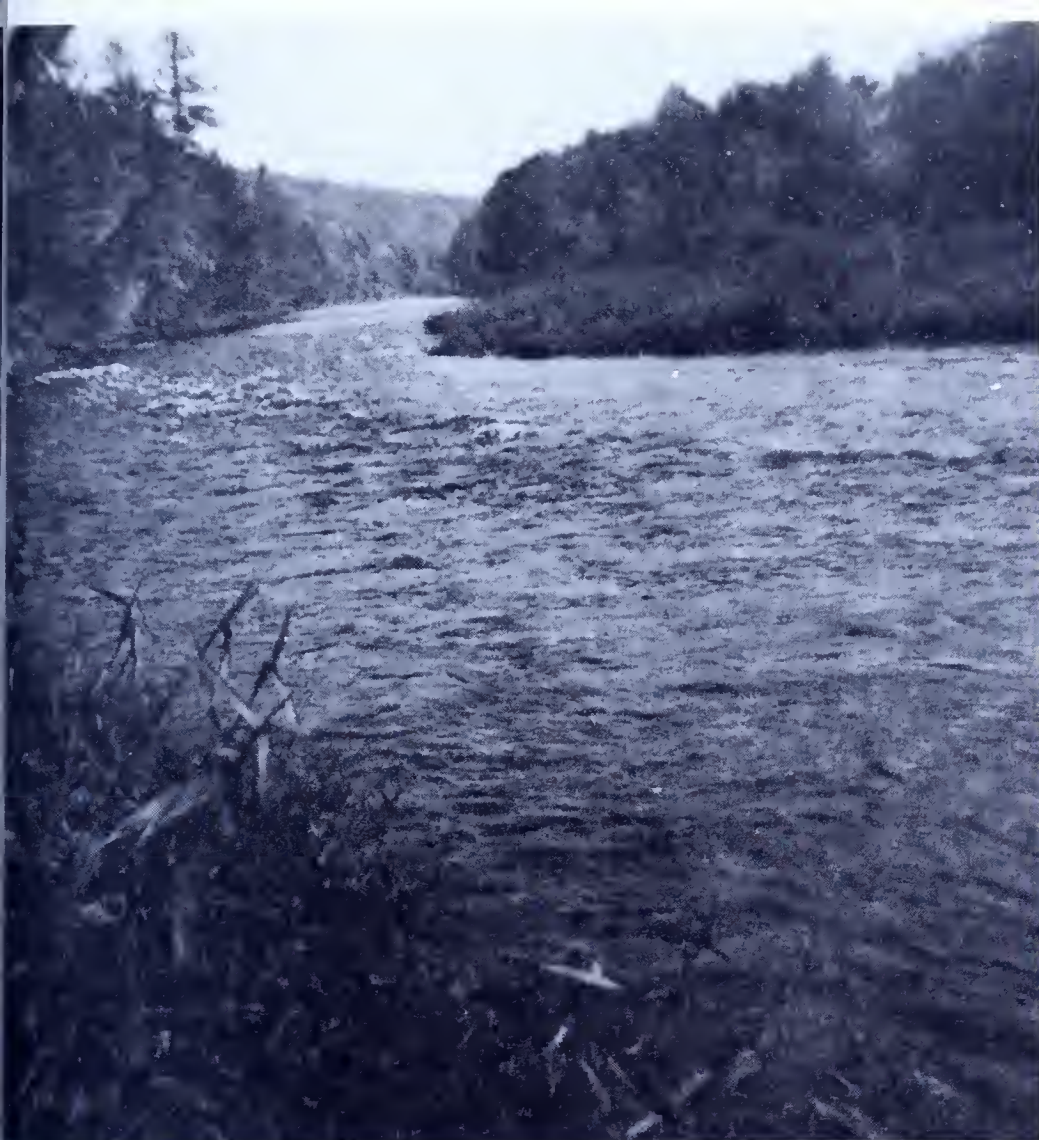
Just minutes before it was time to rejoin Tom and head for home I did get a little action, my second “near-catch” of the day. Making a dispirited cast into a riffle above a partially submerged boulder and guiding the flies in a swing around the rock, I was scarcely aware that the Cahill had been taken. I actually saw the flash of a sizable rainbow before feeling the slight tug, and the trout was gone before my sluggish senses reacted in a futile attempt to set the hook.

When I met up with Tom he reported dolefully he’d had but one strike that may have been a trout and had been under continual harassment from the abundant and voracious chubs. I simply couldn’t fault him on his gentle reminder: “I

told you there wasn’t enough water to float your bait.” Then, just as we’d taken our rods apart and were getting ready for the return hike, the most rewarding (and to me face-saving) even of the day occurred. Tom suddenly put his forefinger to his lips, motioning toward the river. I turned in time to see three graceful deer, apparently two full grown does and a fawn splashing across the water. Tom enthused “That sight was worth the whole trip,” was certainly balm to my bruised ego.

As mentioned earlier, I’d been having considerable action on the Lehigh below Choke Creek, the Luzerne Lackawanna Counties boundary, ever since opening day. My fishing has been concentrated mostly, though, in the stretch from below Dutter’s to Kendall Mill Run, a mile or so downstream. The catches weren’t large but consistent, usually two or three fair-sized rainbows and, on one red letter day, four trout, including fourteen-incher.

New stocking methods introduced by the Fish Commission for the 1977 season must be given credit for improved Lehigh River trout fishing. In past years the practice had been to stock the river between Choke Creek and Dutter’s where it is easily accessible from the road. Last April, with the cooperation of Flint Hill Conservation Club members, the Lehigh was float-stocked from Flint Hill In down to the pipeline which crosses the river about a half-mile above Rout



*The Lehigh is a wild and scenic river for the fisherman, hiker or canoeist.
This is the fast water above White Shanty Run.*

15, providing several stockings over his entire three-mile stretch of river instead of the quota being concentrated in the various large holes downstream from Choke and adjacent to the highway. This was the reason for my over-confidence the day I'd inveigled Tom into making that unproductive safari.

After that experience and with the Lehigh here dropping lower and becoming more sluggish, a change in locale seemed in order. I'd stayed away from the bigger river downstream because of the long hike and the more difficult fishing involved in wading the deeper, rougher water. The Lehigh, after passing Stoddardsville and Boy Scout Camp Acahela, is bolstered by the heavy flow of Tobyhanna Creek, as large at the junction as the parent river. The augmented river thus maintains its level more constantly in periods of low rainfall than does the upper portion.

There's an old road near Dry Land Mill fire tower, to the right off Route

115, via which the lower Lehigh may be reached at White Shanty Run after a forty minute hike. Here the angler has the option of going upstream past White Rock Eddy, or downstream to the Hog Hole and the Long Eddy. Joe Stone, Fred Williams and I were introduced to this part of the river prior to World War II by Mose Luton and the late Bennett Livengood. At that time stocking in this stretch was carried on by rowboats out of Camp Acahela that were purchased by sportsmen's donations. Because the boats deteriorated over the years and weren't replaced the practice was terminated. But, with the completion of Walter Dam, stocking had been reinstituted in these lower reaches of the river. Accordingly, in the early 1977 season, waterways patrolmen utilizing inflatable rafts float-stocked the Lehigh between the scout camp and the dam with a resultant improvement in the fishing.

Around the beginning of July, I made my first hike past abandoned

Swainbank Farm to the river, finding that recent substantial rains had raised its level. Walking upstream past White Rock Eddy about a half mile, I donned the stocking foot waders, put the tackle together and began fishing downstream. On this bigger water I use a nine-foot split bamboo fly rod and a nine-foot leader with a four-pound test tip.

My tail fly again was the Cahill with a local pattern we call the Orange Hackle on the dropper. The river here moves along in a series of swift runs whose flow is split by boulders as big as Volkswagens. My most effective technique in using wet flies in this heavy water begins with an upstream cast, allowing the flies a deep drift down and around the big rocks. The big problem lies in wading this deep and turbulent water to the point where you want to cast. I use a long handled landing net fashioned from a stout mop handle to maintain my footing in reaching the desired position.

This day, in the half mile or so I fished, three rainbows between nine and twelve inches were taken and returned to the water. Except for an occasional larger trout for the table or one killed for examination of stomach contents, I, like a growing number of modern day anglers, return most of the catch to the water.

Before hitting the path back to the car, I did give the slower water at the eddy a cursory try but with negative results.

A week or so afterward I was back in the swifter water above the eddy and picked up a trio of rainbows on the Cahill. Then, as the afternoon was waning, I approached one of those trouty looking lies where you feel confident there's a big one lurking. I luckily made an almost perfect upstream cast. The flies drifted downstream with hardly any drag and as they swirled under and around a huge rock I felt this heavy strike which simply had to spell big trout. Taking off downstream as if jet propelled, it ripped off forty feet of line in jig time. For the next twenty minutes that trout put up a struggle that can only be described as "savage." Each time I managed to retrieve enough line to give me the impression I was gaining, he took off again. Realizing the battle had gone on so long that the No. 8 hook must soon work loose, I tried putting on the pressure — a di-

sastrous decision, for with a sudden lunge the trout tore free and left me gaping helplessly. It never broke water and since I saw only a silhouette I can but surmise its size — the largest ever hooked by me, I believe, and I've caught them up to twenty inches on worms.

As you may well imagine, I was back the next week with designs on that fish. Utilizing the same fly combination, I took a couple of rainbows again on the Cahill. Progressing a little farther downstream, a no-nonsense strike attested to a good fish which put up a lively tussle before being netted. A fourteen-inch rainbow in true colors, it showed no trace of the pale coloring that characterizes newly stocked trout. After being measured and admired, this fish was carefully returned to the water.

By now I'd worked downriver to a point a hundred feet or so above where I'd lost the big trout of the previous week. A huge boulder parted the heavy flow some twenty feet from the left bank leaving approximately a six-foot wide channel between it and a lesser rock nearer the bank. By some judicious maneuvering in the strong current I achieved a position that permitted an upstream cast and a down and around drift between the two obstacles. Minimizing drag by mending, meanwhile maintaining a fairly taut line, the flies slipped between the two rocks and plumbed to a good depth.

In short order I was rewarded with a solid smash, as strong as that of the week before, indicating a heavy fish which immediately started playing a merry tune with the reel click as it barreled downstream. I tried keeping on a little more pressure than I had the last time, while attempting to speed up the landing process before the hook hold could be torn from the trout's mouth. After what seemed an endless struggle I ultimately was able to reach out and draw the exhausted fish into the net. I measured the trout against the nine-inch rule on the fish bag and determined it was easily twice that length — my best trout of the season (although I still feel "the one that got away" was larger). Lowering my worthy adversary gently to the water and finding it none the worse for its tenacious battle, I contentedly watched it swim off to freedom.

Only one more trip did I make



This is a placid stretch of water at White Rock Eddy. Upstream, an angler must pay attention to his footing in the rougher water.

down to the "big" Lehigh, going downstream this time instead of up before commencing to fish. This was toward the end of July when the water was very low and disconcertingly clear, not at all favorable for my style of wet fly fishing. My first cast though brought me a sharp strike and the fish gave me a dogged tussle before I landed it, a nine-inch smallmouth bass. Seven or eight bass ranged from eight to ten inches must have hit and hooked themselves on the Cahill in this shallower stretch of river — but I wasn't out for bass. One of them took my lucky Cahill way down his gullet so I cut the leader as tight as I could and let him swim off with the fly.

The weather continued dry and clear and I didn't go back during the regular season. I figured I'd wait for the fall rains and the extended season. The rains came all right but so heavy and constant that the river was too high for safe fishing thereafter. And so ended my Lehigh experiences for the year.

This season, I'll be back on the Lehigh, I hope, between Dutter's and Kendall Mill Run in early season and farther down as the river recedes and the water becomes clearer. I'll be counting on the Cahill to repeat its killing qualities but if it disappoints me may I have the good fortune to discover another fly pattern with equivalent potential. Then perhaps I'll try to con Tom into taking another crack at the Lehigh with me and, if the fish is willing, may even manage to reestablish my damaged credibility with him.

A word or two about the Lehigh: it is stocked and most of it is open to fishing from the ponds near its source in Wayne County to below the Walt Dam in Luzerne-Carbon Counties. If you fish below the Tobyhanna Junction be cautious of your wading for it can be a wild and woolly river at times. Better have a compass too. In fishing the lower reaches it's pretty rugged country and getting lost could mean an unanticipated night in the woods.

River fishing from a boat is an art all to itself and has a special appeal to many anglers. However, it is not without its hazards since more than one fisherman's outboard has lost a fuel with an unseen obstacle. Those who have know that nothing will tear up a propeller or ruin a lower drive unit faster than striking an immovable object while underway.

And it's not because the angler/boater is not careful. All too often, forgetfulness overcomes caution after a period of clear sailing. Besides proving costly in repairs it can be dangerous.

Most outboards built today have a shallow running set that permits the motor to tilt up automatically if an obstruction is hit while going forward at normal running speed. In addition, many motors can also be positioned for shallow water operation. Both of these features are of great benefit but certainly not foolproof.

For added protection, prop guards are a good investment. At least one manufacturer, OMC, makes them for their motors. These heavy cast aluminum units completely encircle the propeller and bolt to both sides of the cavitation plate at the top and the keel at the bottom. I have one installed on my river-running 7.5 h.p. Fleetwin and it has paid for itself many times over.

Some fishermen have homemade prop guards made from pitchforks and iron straps. The brackets on these rigs girdle the lower drive unit and bolt to the skeg. The ones I have seen are sturdy and do an admirable job.

Any angler running rivers, especially those laden with rocks like the Susquehanna, will do well to invest in either of these prop guards.

Another thing that you can do to make your river excursions more enjoyable is to learn to "read" the water and its signs. You won't do this overnight, but each outing can add to your knowledge.

For instance, on straight stretches the deepest water is usually a darker color and near the middle of the river, while the deepest water on a bend is generally towards the outside.

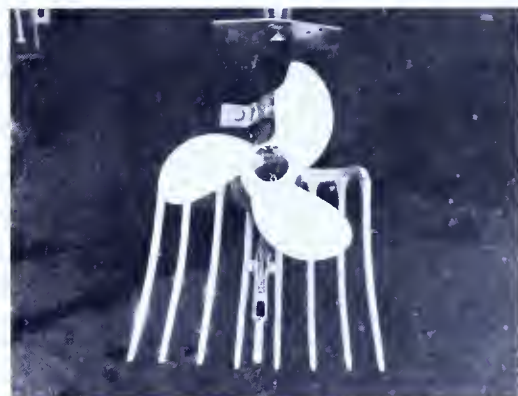


Factory made OMC guard on author's motor, above, completely encircles prop.

Propeller Protectors

by George E. Dolnack, Jr.

Homemade prop guards vary from "cages" made from light, round rod stock to ingeniously attached pitchforks, such as the one pictured here.



Shallow water tends to be lighter in color and ripples more easily in the breeze. Sandbars and silt flats often build up at the confluence of other streams and alongside a channel.

A break in the current, eddies, or turbulent water often marks submerged obstacles. Stay clear of such water or approach with extreme caution. It's also a good idea to be wary of flat, calm water which may mean a shallow bottom.

Keep a lookout for rocks, logs,

snags, or other objects that may lie under the surface. If you notice floating debris or driftwood, slow down and be extra alert. There may be a submerged piece waiting to surprise you.

If you are fishing with a partner, use him as a lookout from the bow. He can steer you clear of both visible and submerged obstacles. Take it easy on strange water and throttle back. Running wide open can be hazardous to your health.



Everything You've Been Itching to Know About Mosquitoes

by Arthur J. Michaels

I felt the sting of the slap on my blood-spattered forearm, and I pursed my lips as the dying mosquito turned over to look up at me. Cursing her (you'll know why it was a she-mosquito later on), I scratched the new mosquito bite. The cold stream water rushed around my knees as the evening hatch ensued, and in my mind, the dying mosquito and I began a streamside parley:

I: "Ouch! You got me! You mosquitoes are a real nuisance!"

Mosquito: "Actually, what you fishermen *don't* know about us will hurt you for sure. We mosquitoes hold the distinction of being responsible for

more human suffering than any other group of insects."

I: "I believe it! But why is that?"

Mosquito: "It's part of our life processes. We need human blood for food. The protein in your blood help mature our eggs and we get vitamin and minerals from it, too."

"But you humans aren't our only targets. Other mosquito species need the blood of certain birds, horses cows and dogs."

I: "If you get blood from people and animals, is your 'bite' really a 'bite'?"

Mosquito: "Not exactly. Here's what happens when we 'bite' you. The females of our species have a long

proboscis for a mouth — very much like a hypodermic needle. We pierce your skin, enter a blood vessel, and draw blood. At the same time, we inject our saliva into the wound. This prevents your blood from clotting and lets us suck up blood smoothly without clogging the proboscis."

I: "Then what causes the itching?"

Mosquito: "It itches because you humans are allergic to our saliva. But by injecting our saliva into the bite as we draw blood we sometimes give you a lot more than just an itchy welt. Some of our species transmit viruses and parasites in the saliva. We mosquitoes are the culprits which pass on the causes of yellow fever, malaria, filariasis, and — get this mouthful — equine encephalomyelitis, just to name a few."

I: "In other words, by mixing your saliva in our blood you pass on a disease or you give us the germs that cause diseases?"

Mosquito: "Yes. And, besides tormenting people with diseases and discomfort, we afflict other animals as well. We transmit malaria between some kinds of birds and mammals and

we seriously impair the health and productivity of many livestock herds. In fact, some regions of the earth are uninhabitable because of our overwhelming presence."

I: "Uninhabitable like this trout stream! Now I'm afraid to venture out of my house!"

Mosquito: "We're the most serious threat in tropical areas where the climate is always damp and hot. In the United States, our spreading human diseases is no longer a major health problem, thanks to your mosquito-control advances."

I: "You said only the females draw blood . . . what about male mosquitoes?"

Mosquito: "The proboscis of the male mosquito is too short and stubby to pierce skin. Males usually feed on plant juices and nectars."

I: "You mentioned other mosquito species, too. Just how big is your happy family?"

Mosquito: "There are about 2500 species of mosquitoes throughout the world and over 100 species in the United States. I am a NORTHERN HOUSE MOSQUITO, the most common

species in the northeast United States and one of the most prevalent Pennsylvania pests."

I: "So you're the enemy, huh?"

Mosquito: "Yes. Your scientists call me *Culex pipiens*. We mosquitoes are related to houseflies even though we don't look like them. Our name comes from the Spanish word *mosca* which means 'fly'."

I: "What about other common mosquitoes in the Keystone State?"

Mosquito: "Try the FLOODWATER MOSQUITO, *Aedes vexans*. This species is a real nuisance along river borders and flooded woodland areas."

"But in our 2500 species we have other *really* tough customers around the world. Some of us are pure trouble in Arctic regions while others thrive at elevations of over 14,000 feet!"

I: "What adaptability! How can we fishermen fend you off?"

Mosquito: "You fishermen can protect yourselves from us by taking a cue from science. In scientific experiments we mosquitoes have shown a preference for dark clothing, so wear light colored clothing on a fishing trip."

I: "Why is it that even when I use bug spray I sometimes still get mosquito bites?"

Mosquito: "When you buy fly dope — sprays, lotions, or whatever — buy a brand with the most DEET (Diethyl-metatolumide) or ethyl hexanediol in it. These are the active ingredients that repel us."

I: "Why is it that we fishermen feel particularly afflicted?"

Mosquito: "All outdoorspeople are keenly aware of our presence — fishermen especially — because we mosquitoes are most at home near water."

I: "How's that?"

Mosquito: "Our breeding places are moist habitats — marshes, swamps, pond margins, or the edges of larger, permanent bodies of water."

I: "Just how does this affect us outdoorspeople?"

Mosquito: "Fishermen like you frequent our breeding places where they're sure to confront us. When you fishermen feel plagued, you don't go to outdoor places where you experience the extreme discomfort of too many mosquitoes. Then tourist business sags in some areas, too, and this can have a negative economic out-

"... in India a species was found breeding in a tank of hydrochloric acid."





"... some species can poke through even the tough scaly skin of a snake."

come."

I: "What is the effect of uncontrolled mosquito populations in other countries?"

Mosquito: "The discomfort of outdoor recreation is only the tip of the iceberg. In countries where we constantly prey on livestock herds for a blood meal, the economic effects of poor health and minimal productivity can be dreadful."

I: "If all of your 2500 species live near water, then controlling you should be easy, right?"

Mosquito: "Yes and no. Near coastal areas like South Jersey and Eastern Pennsylvania, mosquitos are quite at home in salty or brackish pools. In Uganda, one species breeds abundantly in the hot alkaline, volcanic pools near Lake Edward. And in India, a species was found breeding in a factory tank of hydrochloric acid!"

I: "OK, you're saying that your adaptability makes control difficult. With such flexibility, who's winning — mosquitoes or people?"

Mosquito: "Right now it looks like a dead heat. If you want to defeat an enemy, though, first study his

strengths and weaknesses before you attack. As you learn more and more in the laboratory and in the field, you'll probably come up with newer and better technologies for our control."

I: "How are we doing so far?"

Mosquito: "So far so good, for your sake. You're learning more and more about our biology and behavior. Besides learning our preference for dark clothing, you've also discovered that exhaled carbon dioxide attracts us."

I: "Great . . . all we have to do now is stop breathing on a fishing trip and you'll leave us alone, right?"

Mosquito: "Not quite, but that's getting closer to the mark. Your scientists have also discovered that we have a heat sensor system inside of us. This is the way your scientists think we locate victims — like radar."

I: "I see. Stop our metabolism too and we'll be rid of you, huh?"

Mosquito: "You're using more direct methods to get rid of us. Since we breed in water, you've been draining swamps and marshes, and you've also tried covering them with thick

coats of oil or insecticides. The very first experiments of this kind were held in New Jersey and Delaware around 1910, with promising results ever since."

I: "Aha! We got ya!"

Mosquito: "Not so fast! In the eastern United States alone there are 33 million acres of freshwater and coastal marshlands. Think of what would happen if you drained all of them, or if you covered them all with oil or insecticide! The problem is to get us without killing other living things or destroying the environment while you're at it."

I: "I'm beginning to understand why our controlling you and you afflicting us seems like a tied ball game so far."

Mosquito: "And remember our adaptability. Most of us spend our whole lives within a mile of our breeding places but some of our species can fly as far as 75 miles for a blood meal."

I: "OK, so you're all over the place. But besides wearing light-colored clothing, what else can we fishermen do to prevent our becoming your blood donors?"

Mosquito: "We are most active in the evening, at night, and in the morning — just when fishing's the best. Besides using fly dope, don't expose your skin to us. Wear long-sleeved shirts and long pants with socks and shoes."

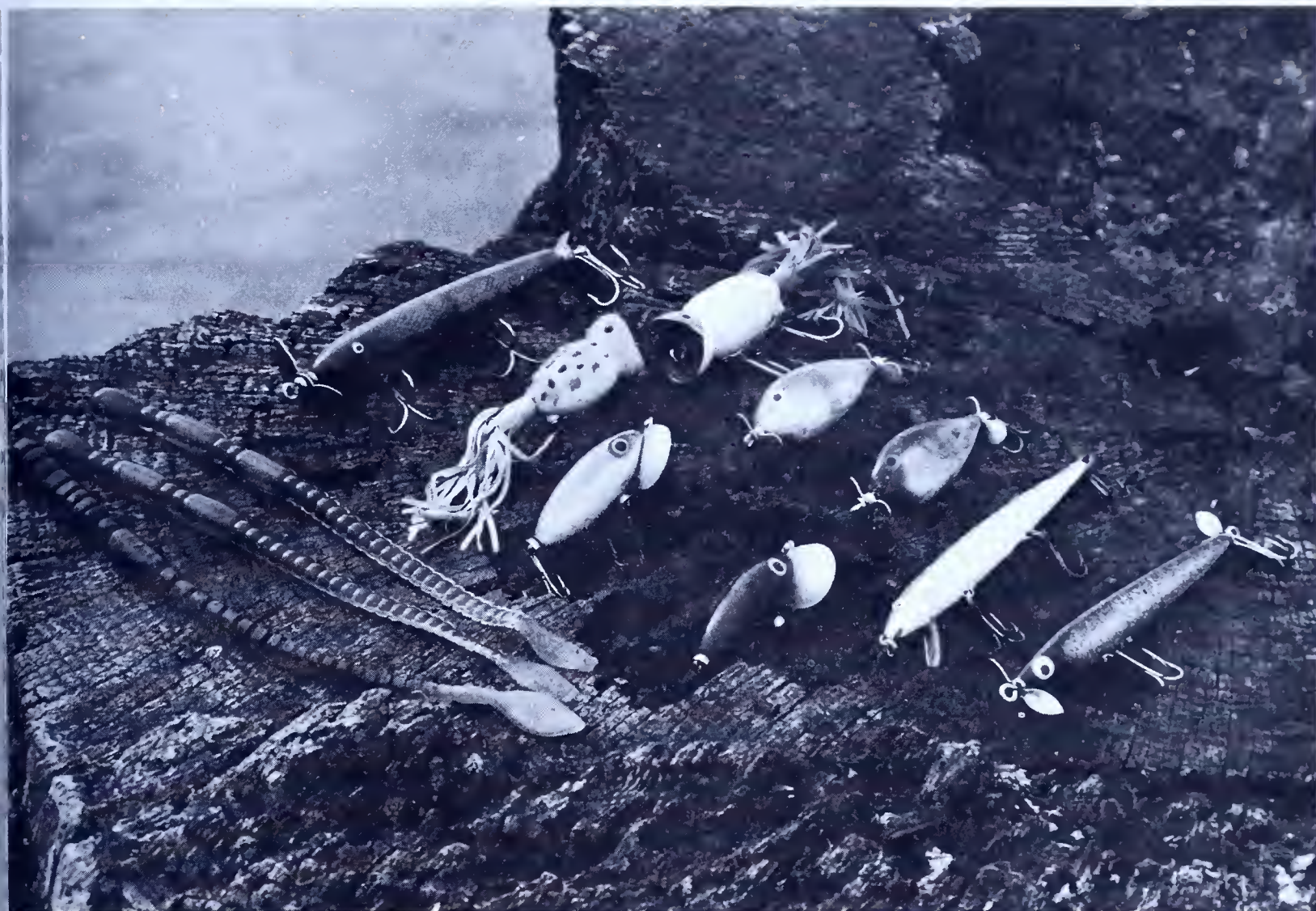
I: "Bunk! Sometimes I get bitten right through my shirt or my socks."

Mosquito: "You're forgetting our flexibility. For a sip of blood, some of our species can poke through extra-thick animal skin and even the toughest scaly skin of a snake! Wear *thick* cottons for extra protection and coolness."

I: "What else?"

Mosquito: "When it's raining, people wear raincoats or carry umbrellas. Learn to recognize and prepare for mosquito bite weather, too. We favor conditions of heat and humidity. If you go fishing when it's hot and humid, count on it being good mosquito bite weather."

The dry fly I had been casting disappeared in a sputter of water and I struck quickly to land a plump brown trout. When I looked at the inflamed welt on my forearm after stringing my quarry, the dying mosquito was gone.



Lures such as these represent the types of fish catchers that will work well in the weeds when modified.

"Luring" Them Out of the Weeds

by Bob Holmes

"The weeds are up already," the man fishing a short distance away complained as he cleaned a strand of coontail from his jig. "It won't be long before the lake won't be fit to fish."

He was mistaken! But far too many Pennsylvania anglers share his view and abandon productive bass lakes when they get an abundance of aquatic growth under the summer sun. Sure, fishing gets tougher . . . you can't use those "pitch and crank" spinners that are so productive. It's nearly impossible to use jigs and spoons, or underwater plugs.

But fishing is far from over. In fact, it can be pretty good, largely because weeds provide the cover bass and bait fish want. You just have to change

tactics and adapt familiar lures for the tangled conditions.

Middle Creek Lake, in Lancaster County, is a good example of a lake that remains productive throughout the bass season, although by July its waters are thick with weeds.

On an August outing last year, a fisherman pulled his boat to the dock. His hat and fishing vest were festooned with patches with familiar brand names on them. One of the patches declared he was a field tester for a major tackle manufacturer.

He secured his boat and hoisted an enormous tackle box to the dock. Then he lifted a stringer with two bass over 20 inches. "I caught another eight," he said, "and hit two that

broke my line."

His lure? "Purple worm."

Whether it's purple, black, red, yellow, or some other color, the plastic worm is a consistent bass lure. In the weeds it can be fished top water, mid-depth or in the shallows with equal effectiveness — if the technique is right.

If you're like most bass fishermen, there's nothing quite like the explosion of a bigmouth as it smashes a surface lure. If you rig the plugs correctly, bass can be taken from the weeds with a minimum of fouling. Your old standby lures will do just fine, whether they gurgle, pop, or make no sound at all as you work them. If they caught bass on the sur-

face before the weeds grew, then they can be just as good under the new conditions.

Let's look at worming the weeds first.

Those already-rigged, off-the-shelf worms will catch fish — at times. But in the weeds they can be a nightmare, at least as far as you're concerned. They have too many exposed hooks, and the small propeller that's usually on the front will pick up moss.

The worm for the weeds is the unrigged, super-soft kind you get for about 10 cents each, depending on where you shop and how many you buy. Worms six to seven inches long and in purple, violet or black work well on most lakes. You'll also need some 1/0 or 2/0 hooks, preferably those designed with plastic worm fishing in mind. They'll have either a barb, or a bend on the upper shaft, to prevent the worm from sliding down the hook.

One of the most popular methods of rigging a plastic worm hook is the "Texas" rig. A single hook is tied directly to the line. The hook point is buried into the head of the worm and brought out about a half-inch from the head. The hook is then pulled through the worm until the eye is buried in the plastic. The hook is turned with the

point toward the worm. With the worm hanging straight, the hook point is buried in the plastic until it *almost* comes out the other side.

In deep, clearer water, this rig often is fished with a slip sinker to get it down fast. For the weeds, *don't* use any kind of weight. A six-inch worm will have enough weight of its own for casting. And, weightless, it pulls through and over the weeds with nary a tangle.

One successful way to fish the worm in the weeds is to cast beyond a pocket of unobstructed water. The retrieve is a slow, twitching motion — short jerks with the rod tip — be sure to quickly take up any slack that develops.

Sometimes a bass will hit the worm hard as it snakes across the weeds. More often, the bass will be waiting at the edge of the hole in the moss for the bait. At the edge of the pocket, ease the worm slowly into the clear water and let it flutter toward the bottom. Bass normally will take it on the drop.

If it makes it to the bottom unmolested, work the worm along the bottom with the twitching retrieve across the pocket and onto the mass of weeds on the other side.

Sometimes your line will move to

one side, or you'll feel only a gentle "tap," "tap." Both are signals for you to set the hook sharply.

A little bit of practice and a few fish later, you'll be able to tell if it's a fish causing your rod tip to dip, or if it's just snags on the bottom.

Fishing with plugs also works well in the weeds, if you have rigged the lures properly. You can replace the treble hooks that are standard equipment on most surface lures with double hooks. If you do, install them so that the barbs will ride up and over the weeds rather than dig into them on the retrieve.

If you don't have double hooks, turn the treble hooks on the lure's hook hangers until two barbs ride upward as if you had double hooks. Then, with a pair of pliers snip the single, front-facing barb as close to the shaft as possible.

There's no noticeable loss of hooking power.

A slow erratic twitching motion on the lure similar to a struggling minnow, frog, or other bass favorite works most of the time. Break up the twitching action by letting the lure rest. Strikes often come during the pause, or when the retrieve begins again.

You'll still get some weeds, especially with the balsa minnow lures that have a protruding lip to make them wiggle. But they'll catch fish and make up for that minor inconvenience.

On one July 4th outing on Lancaster County's Speedwell Forge Lake, near Lititz, a bass fisherman slid his boat near a patch of weeds near a picnicking family and was asked about his luck.

"I've got six keepers," he replied, as he pitched his lure into the clump of weeds in front of him, "all of them on the edges of the weeds."

With worms and plugs, the key to success is to be able to cast into the weeds and make an effective retrieve without picking up strands of growth. Bass must be persuaded to grab your offering before it can escape. That's often the instant the lure enters uncluttered water.

When fishing the weedbeds, the best open pockets are those that have a combination of bass cover. A stump or log protruding through the weeds or lying on the bottom; or, small brush or a tree sticking up through the moss

A plug such as the one shown here can be made semi-weedless by clipping one of the treble's shanks. Some anglers prefer to replace the trebles completely with double hooks.





Shown above are the steps involved in rigging a "Texas" worm hook (top to bottom) and two types of worm hooks.

will attract the most and largest fish.

Keep casting to these pockets: three, four, even five times. Sometimes it takes a while for the message to sink through to the thickheaded bass, or make him mad enough to strike. Don't hesitate to try the pockets again, perhaps an hour later, because fish will move into them regularly.

Where you can distinguish definite edges on the weedbeds, work your lure through the obvious points and depressions. They're usually the most productive. Undoubtedly the most neglected water for bass in both early morning or late evening is the shallows.

Opening day on Middle Creek Lake last year provided a good example of eager fishermen ignoring this prime water. By 5:00 a.m., the 50 acres open to fishing were crowded — 45 boats were on the water! Nearly every boat was offshore at least 100 feet. And, except for shoreline anglers who were tossing their baits out to deeper water, the shallows were barren.

Despite the crowding, there were plenty of fish to be caught — in those

narrow, less than a foot deep bands of clear water between the shore and heavy weedbeds. On this occasion, a balsa minnow pitched almost on shore and worked back toward deeper water and the weeds provided a keeper limit in less than three hours.

One feisty bass of about a pound and a half slashed his way through a school of minnows trapped against the shore. The lure pitched over the weeds into the shallow water three feet to the left of his rampage was engulfed almost as soon as it hit the water.

One fisherman who carried at least 20 balsa minnows in the pockets of a worn army field jacket claimed that, on Gifford Pinchot Lake, in York County, "*You can't fish too shallow when they're feeding in the morning or evening.*"

Pitch the lure to the shore. Even hitting the bank won't hurt anything. Once the waves made by the landing plug have died down, a twitching, struggling retrieve can produce a strike from a marauding bass. Often the bass will be holding, just on the edges of the weeds, waiting to ambush

minnows in the clear shallows. If that fails, work the lure across the weeds and over open pockets, allowing it to rest in clear water before continuing its struggle.

Floating poppers with rubber or vinyl skirts rigged with the double hook style also work effectively, as do plugs with popping faces but no skirts, and those that have small propellers on the front that create a sound like that of a struggling minnow.

One other tip: use at least 10-pound-test line. Although a bass may smash the lure on the surface, or gently engulf your plastic worm below, once hooked, he'll head for the thickest cover. Unless you're extremely lucky, you'll wind up with two pounds of fish and six pounds of weeds on the end of your line. But, if you keep your line tight you can keep the fish and move the weeds too — if the line is strong enough. Even if you can't move the weeds, there's a good chance you can go to the fish and land him.

Trouble with weeds? There can be. But with the right lures and fishing techniques the problems will be small.

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

FISH FACT: Big trout prefer imitations of minnows and large nymphs for a very sound reason: these represent big morsels of food. Big trout would expend more energy in taking small insects than they would gain in energy derived from eating them.

If crowded big trout streams irk you, find those little tributaries where the angling pressure is not so heavy. Good fish often are found in small brooks, especially in the spring when the water level is high, and also during the summer, when the water in small streams usually is cooler than in large streams.



It's okay to fish with a cast of two or even three wet flies, but in water that is low and clear a single fly is more effective.

Big assortments of lures sold at bargain prices are no bargain at all. Most of the time they are lures that have not enjoyed good sales.

Smallmouth bass living in streams are as fond of the nymphs of aquatic insects as trout are.

A bit of open water between a bed of weeds and the shore of a pond or lake is an invitation for careful fishing. Fish waiting in the weeds for a meal like to face toward the shore, alert for minnows that live in such water.

In fishing big streams with dry flies, work you way downstream and cast the fly upstream and across at an angle. Downstream wading is easier and less disturbing to the fish; and, if they are cast at a good angle, dry flies will get a good float with the downstream current.

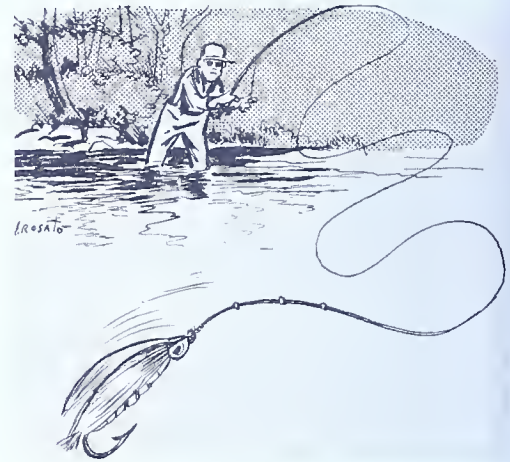
Don't use big, noisy plugs in fishing comparatively shallow and clear water. Take up the fly rod and fish with dry or wet flies, nymphs, tiny floating bugs and such natural baits as grasshoppers and crickets — and fish as carefully as you can, as if you were angling for trout. Bass are not stupid.

Retrieve to the limit every cast of a floating bass lure. The fish often will follow the lure some distance before striking it. The disturbance that results when a lure is picked up off the water can frighten the bass away. This same rule, of course, applies to fishing with floating flies for trout.

Why should a leader sink? Because a floating leader casts a shadow on the bottom that can spook a fish. A fine floating leader, on the other hand, escapes the notice of the fish, especially if the sky overhead is bright.

Matching the hatch, the favorite "science" of some fishermen, may be a problem for many trout anglers but it should not be allowed to interfere with their sport. Remember that flies with the general size, shape and coloration of natural insects take trout. They do not have to be precise imitations of the naturals. They can be used successfully if the angler has no artificials that are exact imitations of the naturals.

Playing a fish with a fly rod is easier than with a casting rod. The fly rod, because of its length and flexibility, keeps a constant pressure on the fish, whereas a hooked fish is able to get a more direct pull on the short and stiffer casting rod, sometimes causing the hook to pull out or the line to break.



If a split shot is needed to get a streamer or wet fly down into the water, a single heavy shot is the poorest to use. Instead, use two or three very small split shot and space them on the leader, the first one six or eight inches above the lure and the others, if needed, spaced at intervals of about six inches.

You can add to the flash of a streamer by tying a few strips of fine tinsel on each side of the fly. Use fine thread to attach the tinsel just back of the head of the streamer. A couple of half hitches or a whip finish will hold the tinsel in place.

Really lively bait is essential for good bass fishing. The bass is an active, aggressive fish and is attracted to prey that shows signs of life and seems to be trying to escape but it usually will ignore lifeless, actionless bait of any kind.

Try a fly rod and small lures in areas where fishing pressure is heavy and the fish have seen a lot of much larger casting and spinning lures.

Roll casting is an excellent way to reach water that is impossible to fish with accompanying back casts—but don't overdo it. The line slapping down on the water will disturb fish. Make a roll cast, fish it out carefully, then move to a new spot where the line disturbance probably was not noticed.

Adjust the drag very carefully on a casting or spinning reel. Rushes of a hooked fish are hard to anticipate and a correctly set drag will prevent line breakage.

Light and dark olive wooly worms are excellent bluegill flies.

There is a happy in-between period for good trout fishing. Very cold water early in the season and very warm water in the middle of the summer make for tough fishing. So, late spring and late summer, when water temperatures are at a more comfortable level for them, are the times when trout feed most actively.

Use of a split shot or two is not the only way to get a worm down deep; in fact, it is a poor way, for the shot could make the worm appear lifeless. Instead, cast up or across stream, keep tension out of the line, and let the worm drift with the current, while its own weight carries it down into the water.

Don't keep wading straight across a stream when you encounter heavy current. Wade downstream at an angle and the current will not be so much of a problem.

The very edge of a current, that is, the precise line that divides fast water and an eddy or slower current, is the spot to fish. Fish lie in the "edge," holding comfortably in the slower water while waiting for food to drift within their reach.

Trout prefer fast water or at least some current when they are feeding on nymphs and submerged insects. This is because the current dislodges natural food and carries it to the trout.

Do fish steal your worm bait? Try using smaller worms. Bluegills, for example, nibble on nightcrawlers, taking them bit by bit without being caught, but they are easily hooked on small garden worms.

Shoreline fishing from a boat is easy. If two are fishing together, one can control the direction and speed of the boat while the other casts, the two taking turns on the chore of boat control. If the angler is alone in the boat, it can be allowed to drift along the shore, with the angler correcting its position from time to time with a gentle pull of the oar.

Nymphs tied to look like the caddis fly inside its case are fine lures for early spring, before insect hatches really begin. Most anglers have caught trout that had the caddis nymphs, cases included, in their stomachs.

Big trout prefer minnows or other large morsels of food but they will take green drakes in great numbers when these insects are dropping their eggs, usually near the end of May in Pennsylvania. The Coffin dry fly is a good pattern to use at this time, in addition to the drake imitations, and, of course, during the Coffin fly hatch in the early part of June.

Fish for bluegills by day, for they are not often night feeders. If the sun is high and bright, expect to find bluegills in shadows cast by shoreline vegetation or weeds, stumps and other obstructions in the water.

A rod with a soft action tip and a line or leader of two to four pounds test will hold a fish of good size. The soft tip of the rod will absorb the shock of a strike and the rushes of a hooked fish.

A rise in the level of a large stream often sends trout into smaller tributary brooks and some of them will remain in the brooks if they find pools that provide safety and food. So little feeder streams are good fishing places after a heavy rain.

Could this be called "car"-apace pooling? Foto finagling by Fegely.



Leaky Boots

(continued from page 3.)

until he returned.

I don't know where he got such a pitching arm, because that banana was overthrown about fifteen yards behind me. Being fast on my feet, I did manage to run back and catch that one. The second one he threw for my Dad was eighteen yards too short. I made a mad dash to grab it before it hit the ground. I never made it. I stumbled over a rock about halfway. I got my head and shoulders about 18 inches off the ground and I could neither fall down nor straighten up. I was taking six foot strides by this time my feet slapping the ground sounded like I was wearing barrel staves. I hit the water like someone launching a Sherman tank. Halfway under I could already hear the laughter and my old buddy was leading the pack. Later, as I sat there trying to dry out, a very concerned fisherman came upstream looking for someone who lost his hat and license. He fished it out of the riffles downstream. As I sat there, I could detect a faint, but hearty laugh coming down from the Red Zone.

Bless that little duck. I hope he got away after Cloyd "missed" him. My subscription to the *Angler* expires November '78. Cloyd will be around one of these days to renew it. When he does, I am going to dedicate my next three-year subscription to that beautiful little duck.

PAUL B. VANDEVANDER
Bellwood

"DOGFISH"?

In your December 1977 issue of the *Angler* you had a picture of a bowfin classified as rare in Pennsylvania.

I have been fishing in Pennsylvania for over 40 years and have never seen one. Last year I caught a couple of them in two different lakes in Michigan but didn't know what the correct name was. A nearby fisherman said they were "dogfish" and that they were not fit to eat. Is this true?

GEORGE GRICE
Glassport

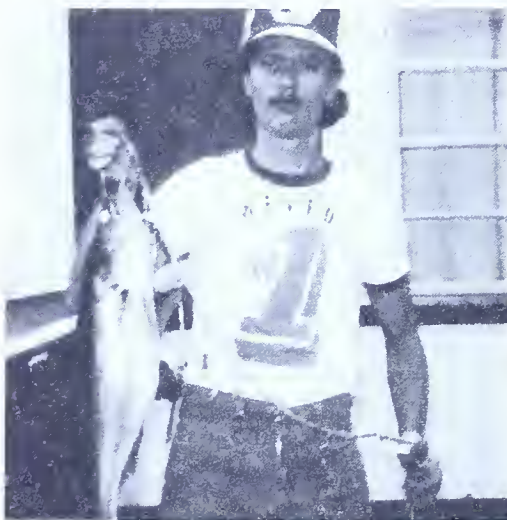
Our "rare" classification given the bowfin in that issue was a poor choice for a caption. A "living fossil," such as the bowfin, is certainly going to be around for a long time. We should have amplified "rare" by saying it has *limited distribution* in the Keystone State. Historically, its appearance has been limited to northwestern Pennsylvania, notably Presque Isle Bay and a few other lakes. Many years ago it was used ex-

perimentally as a "control" fish in a few areas abounding in stunted panfish, bullheads, etc. Evidence of that distribution shows up every so often when an angler catches one where none were thought to have existed. "Dogfish" is one of its common names. It is decidedly piscivorous, puts up a terrific battle when hooked, and, although not generally accepted as a food fish, it has been smoked and consumed. Ed.

SATISFACTION —

I know this walleye is no trophy by many standards but since this is my first year for walleye fishing it is a trophy to me.

A Happy Fisherman
LEONARD G. GIBSON
West Elizabeth



"STAY HOME," HE SAYS —

I say "Who needs to go to Canada or any place else when you can do just as well fishing here in Pennsylvania?" Enclosed find picture of me with a 11½-pound walleye caught in the Delaware River in Wayne County. Not only that but I caught four more walleyes with it that brought the total weight of all the fish close to 30 pounds!

I've been to Canada and the other states but, overall, I say fishing is best right here in our own state. I know because I've done it.

Also enclosed find check for \$7.50 for a three year renewal subscription. The *Angler* is well worth it. I have subscribed to it for many years. Thank you.

ALEX JANOS
Conshohocken



"BATCH O' BOWFINS"

That catch of bowfins, left, made by 15-year-old Rob Mueller, of Philadelphia, won't win any state or national contests, we're sure. But it has got to be one of the most unusual of catches for a number of reasons: tens of thousands of anglers never see a bowfin; even fewer catch one. Even fewer fish intentionally for bowfins, due, probably, to their limited distribution. Rob did. His rig was a 12-inch nylon-covered steel leader, a #2 treble hook. Two of the fish took 4-inch sunfish, the other a 5-inch perch! His trio measured 26", 30" and 32" and weighed 3 ½, 5 ¾ & 7 lbs., respectively. Monroe County's Indian Mountain Lake produced this unusual catch for young Rob.

Northeast Conservation Law Enforcement Chief's Association

Conservation Officer of the Year Award —

At the 1973 meeting of the Northeast Conservation Law Enforcement Chiefs' Association it was unanimously agreed that each member agency would nominate a Conservation Officer of the Year for 1974.

In each of the years following a member of the Pennsylvania Fish Commission's Law Enforcement Division, selected by the executive staff in Harrisburg from a group of candidates nominated by the Division's six Regional

Supervisors, was chosen to receive this award.

Commenting on their selection, Executive Director Ralph W. Abele stated, "May I be the first to extend congratulations to you on this attainment. I feel you exemplify our 'Thin Green Line,' for which I am justly proud."

The officers chosen are shown below, in chronological order, with excerpts from nomination statements of their respective supervisors.



Conservation Officer of the Year — 1974

Waterways Patrolman Eugene Scobel, Butler County

Officer Scobel is courteous, sincere . . . he gives prompt attention to any assignment on problems that confront him within his district . . . an outstanding individual who is highly dedicated to the fight for clean water and fisheries conservation and a credit to the Pennsylvania Fish Commission.



Conservation Officer of the Year — 1975

Waterways Patrolman Joseph Bartley, Pike County

Officer Bartley is highly respected by not only members of the Fish Commission staff, fellow employees, the recreational public, but by all other law enforcement agencies. Officer Bartley is always ready, willing and able to help in any way he can and has saved many streams from almost complete destruction.



Conservation Officer of the Year — 1976

Waterways Patrolman Gerald Crayton, Northern Allegheny County

Officer Crayton has maintained an extremely high level of productivity and enthusiasm in an area that requires an above average individual just to keep his sanity. He has the largest concentration of boats and boat dealers, fishermen and issuing agents in the state plus a telephone that never stops ringing.



Conservation Officer of the Year — 1977

Waterways Patrolman Raymond Bednarchik, Chester County

Officer Bednarchik's district is a small area with a large population, 275,000 . . . the density of industry offers and extremely diversified district for a waterways patrolman. These conditions mandate constant vigilance over the waters of the Commonwealth. He assists fellow employees, other conservation officials and enforcement officers whenever possible.



WONDERS OF WEEDS

Late summer brings on many complaints concerning the abundance of "sea weed" on the Juniata River and the problem it causes for fishermen in fouling plugs and making fishing a little tough. The warmer waters in August really encourages the growth of various aquatic plants in most waters of the state. Although these plants are a nuisance to the fishermen it should be remembered that this thick growth affords excellent habitat for young fish born only weeks earlier to hide and grow, protected from their larger kin. Without the weeds the fishing conditions might be better, but the fishing itself would be rather poor.

Larry R. Baker
Waterways Patrolman
Mifflin/Juniata Counties

"GOOD SAMARITAN"

Altogether too often the general public envisions a Waterways Patrolman as only a "stream cop," dealing only with enforcement of the laws. A closer look at the Waterways Patrolman position reveals they are much more — public relations men, educators, environmentalists, record keepers, etc.

Another role of their position is often "Good Samaritan." One such incident recently relayed to me occurred while our Waterways Patrolman Warren W. Singer, Jr. was patrolling the Pinchot Lake area. Upon seeing two young people walking down the road carrying a gas can with very anguished looks on their faces, Warren turned his car around and went back to see if he could help.

As ludicrous as this may sound, it turned out that these two young sound, sober people had started out at noon in New Jersey to attend a party in another part of New Jersey and at 5:00 p.m. were completely lost — in Northern York County, Pennsylvania!

Upon explaining the situation to them and showing them on a map where they presently were located, the girl began to cry and got very upset. It seems they had just spent their last 65¢ on the can of gas. Officer Singer had \$7.00 on his person which he offered them. They took it,

thanked him warmly and promised to return the money. This all happened in August 77 and, upon relaying the incident, many people told him he had "been had" . . . it was probably a con game. Officer Singer insisted that his many dealings with people had taught him much and he felt sure these young people were honest. In January 78, after completely forgetting about this incident, Officer Singer received a warm letter from the young lady and a check to reimburse him for his one of many roles as a Waterways Patrolman — Good Samaritan.

Richard Owens
Regional Supervisor
Southcentral Region

UNIQUE!

I am attaching a photograph that I recently had taken of a unique mailbox. This appeared to be a discarded outboard motor that was converted to a mailbox. However, when I examined it, I found it must have been made for a display model by one of the engine companies. The unit is made of plastic and the inside is hollow. However, the gentleman was able to make a very nice mailbox from the model.

Perry D. Heath
Waterways Patrolman
Cumberland County



TRY IT —

On several occasions we have observed several variations of an old, but seldom used, technique for attracting fish to favorite fishing sites. The technique, similar to maintaining a "chum line" in saltwater fishing, involves placement of spoiled meat or an animal carcass over the selected areas of a lake or stream. Flies will deposit eggs which will develop into maggots, maggots will continually fall off into the water, and fish will station themselves to take advantage of this steady source of food. This technique is especially effective with trout and panfish in either streams or lakes.

Richard W. Marshall
Area Fisheries Manager

STOCKING THE HARD WAY

Last March, while patrolling Hannas Creek during the preseason stocking, I apprehended two teenagers under a bridge with six trout in their possession. I asked them what they were doing with the trout in the bucket. Their reply was that they were going to stock another stream. I then informed them that they violated the fish law and their fine would be used for stocking more trout.

Amil A. Zuzik
Deputy Waterways Patrolman
Westmoreland County

FOR LOSERS ONLY!

I had apprehended a person for littering and as I was explaining the Field Acknowledgement method of settlement I showed him the three-part booklet of receipts. His companion remarked that they looked "like lottery tickets." When I informed him that there weren't any winners the defendant shoved the book aside and said, "That's OK, I'm not buying any anyway." I issued a citation for fine and costs.

Kerry L. Messerle
Waterways Patrolman
N/Lancaster County

SCHUYLKILL LIVES

The remarkable recovery of the Schuylkill River is certainly no secret for those who fish her waters. Our biologists however, continue to be amazed at mounting evidence of the extent of that recovery. Five days of sampling for American shad below Fairmount Dam in downtown Philadelphia last spring also resulted in the recovery of ten muskellunge between 30 and 32 inches in length and sightings o

additional specimens. Fin clips revealed that most of these fish were stocked as fingerlings further upriver in 1973 and 1974.

Richard W. Marshall
Area Fisheries Manager

TOO BIG TO SWALLOW

Recently, John Robb, an employee at Mountour Preserve, found a walleye floating in the lake. This in itself is not unusual. Many people complain they cannot catch fish in this lake as in other lakes. But back to the story at hand. Protruding from the walleye's mouth was the tail of a ten-inch bluegill. The walleye was twenty-four inches long. The moral of this story is don't take anything too big to swallow.

John W. Weaver
Waterways Patrolman
Columbia/Montour Counties



TOLD YOU SO!

While patrolling Bentleyville Water Dam during the last trout season, I observed a fellow by the lake holding a fishing rod. He turned around and looked at the state car which had a large Fish Commission emblem on the door. He quickly laid the pole down — which was an indication that he might not have a fishing license. I asked him for a fishing license and I got the all-time favorite reply of, "I wasn't fishing." He said that the rod, with its line still in the water, belonged to his buddy fishing next to him who was properly licensed. This explanation meant that his friend was fishing with three rods which was also illegal. Rather than argue over who was in violation, I allowed the two friends to confer and decide which one was guilty.

Following about two minutes of discussion between the friends, the man hold-

ing the fishing rod came over to me and said that he was fishing without a license. After paying the fine, the guilty party asked me which violation had the higher fine. I told him that *fishing without a license* was \$5.00 more than the charge of *fishing with three rods*. He then turned around to his buddy and said, "See, I told you we should have picked the other one!"

Stan Plevyak
Waterways Patrolman
Washington County

PROBLEM!

While checking fishing licenses at Kellettville Bridge, Forest County, I asked a lady why she wasn't displaying her license. Her reply was, "Do you see any place on my suit big enough to pin a license?" I had to agree there just wasn't! I suggested she might pin it to a yellow ribbon she was wearing in her hair.

Owen F. Quarles
Deputy Waterways
W/Warren County

WE'LL FORWARD IT —

Ron Soubie and Wayne May of McDonald stopped by the booth during the annual boat show at the Civic Arena in Pittsburgh. Both men expressed a desire to buy their fishing licenses. Deputy Bob Snyder of Allegheny County gave Mr. Soubie his *Angler* sales pitch and was soon filling out a three-year subscription. All of a sudden Mr. Soubie coughed violently and exclaimed, "I feel like I'm gonna die . . . maybe you better make that a one year!" Mr. Soubie's buddy Wayne chimed in, "Give him a forwarding address!" To this I added, "Sure! We'll mail the *Angler* anywhere!"

Don Parrish
Waterways Patrolman
Beaver County

IT'S NO USE!

Several years ago, towards the end of February, I was on patrol at Harveys Lake when I observed two senior fishermen preparing to go out onto what was now the dirty gray, very dangerous type of soft ice. I attempted to persuade the men not to go out on the lake, but one in particular, without a reply to my advice gathered up his equipment and started out. Both his companion and I watched and after the man had gone about ten steps from shore, sure enough, down through the ice he went, chest deep into the very cold water. After about ten

minutes, and with the assistance of his buddy and a line I luckily had in the patrol car, we got the unfortunate (or possibly you could call him *fortunate*) fellow off the ice and into their still warm car.

Before they pulled away the shivering victim called to me saying, "I don't know why you Fish Commission people don't put warning signs up when the ice gets bad!"

Claude M. Neifert
Waterways Patrolman
N/Luzerne County

LOCH MARBURG MONSTER

Lake Marburg is well known for producing some large fish and the growth rate in the lake exceeds that of most waters in the Commonwealth. I must say, I knew there were large fish in the lake but this one must be a real "Monster."

While checking fishermen one hot humid day last summer, this story was told to me, and, *is supposed to be true*.

It seems a visitor to the park was throwing his toy poodle dog into the lake and letting him swim back to shore to let him cool off. On one of the return trips there was a large swirl and the dog disappeared and hasn't been seen since!

William F. Hartle
Asst. Supervisor
Northcentral Region

OUTDOOR SPORTS FOR ALL SEASONS

I was on my way to a Deputy Game Protectors' meeting one night in October with Deputy Game Protector Rupert and Deputy Waterways Patrolman Kingery.

As we crossed the Allegheny River, we saw a boat towing a water skier wearing a wet suit and probably wishing that summer was just starting instead of over. I thought to myself that Mother Nature has a season for everyone interested in outdoor recreation, though some groups find that only one season is suitable for them — such as the water skier of summer.

Fishermen are blessed the year-round as fishing is always in season.

Gerald T. Crayton
Waterways Patrolman
N/Allegheny County

MOVING?

Send us both your
old and new addresses
with both zipcodes.

Ashore & Afloat

by Gene Winters

Many families that boat together don't really enjoy it. At least not as much as they could or should. Often something takes place on and around the water that was certainly not anticipated at buying time at the dealer's showroom. Too often family boating unintentionally ends up being a weekend endurance test or at least a dreadfully boring, stretched out Sunday afternoon.

While this type of negative syndrome may appear in any boating endeavor, it seems most likely among the powerboaters. Families that utilize rowboats and canoes are often less likely to be affected by it simply because the size, capacity, and range of their craft (muscle or powered) provides built-in limitations to a too strenuous pace. Sailboats of any significant size are also less likely to be ensnared as the entire crew must, out of necessity, participate in its operation. But no boating family need suffer needlessly — the cure is in the hands of the skipper. Since he usually (realizing it or not) is the one who sets it in motion, he alone can often correct the disenchantment. How? Simply by ensuring that the whole family is actively involved and participating in the sport to the fullest.

We will assume (although it is still quite in evidence on the water) that the skipper is the man of the house. The biggest problem is that the male skipper is not very often inclined to either delegate or share responsibility. Often his dictatorial approach to command is not self-recognizable. Call it male chauvinism, male ego, the power urge, or what have you, it does exist. Yet these same otherwise excellent captains will moan and groan to their fellowmen every Monday morning about not understanding why their families do not like boating.

Granted there are some persons who, for other reasons, never feel at ease on the water and tolerate it only in the name of family sanctity. But for hundreds (if not thousands) of wives and children (particularly teenagers), a boating weekend is not something eagerly awaited with delightful anticipation. The promise of great adventure that originally loomed ahead, simply never materialized. Again, generally, the skipper is usually to blame. He often *drives* his family away from the water, mentally, if not physically.

He does it by ensuring that the family is never briefed, never consulted about the weekend's plans. It's often "come along or stay home." Without giving sufficient advance notice of his plans, he increases the chance of everyone becoming unnecessarily tired as well as hungry and thirsty. He is on an endurance run and far too often lavatory stops and leg-stretching excursions are not on the skipper's agenda. He forgets much

more quickly than the crew can, his shouting and yelling during launching and often wonders why they remain so still and silent once afloat. He fails to realize they are already looking ahead, usually with fear and trepidation, to the boat retrieval that lies ahead.

When you come down to it, even Dad doesn't *really* enjoy boating, although he may not realize it. He may not understand why he feels so tired Monday morning after a weekend of "relaxation." All he has to do to correct things (if he recognizes some traits I've covered so far) is start slowing down the pace. This single action alone accomplishes much: the skipper will end up with a more relaxed time on the water; fuel consumption will fall and maybe save enough money to treat the family to hamburgers on the way home and certainly the family will get far more out of boating.

A slower pace offers the ideal time to teach the crew to take over some of

All "crew members" should get involved and really into boating.





Practice with a dinghy can be a prelude to handling larger craft.

he underway activities. A good skipper will delegate some responsibility and take steps to ensure his crew is both capable and properly trained for the tasks assigned. A thorough family indoctrination should encompass every possible activity and involve every possible crew member. Rotation of crew assignments keeps the family involved and avoids boredom. To properly train the crew means occasionally giving up the helmsman's seat. The wife and any teenage children should be encouraged to take the wheel. With proper supervision and loving patience they should soon acquire the piloting, navigating and docking skills that give Dad some hipboard freedom. Uncrowded, straight stretches of waterway are ideal for this purpose. If Dad is the only trained skipper at hand, he is not only robbing himself of boating experiences, he could even be assisting in his own demise. More than one skipper has fallen overboard, slipped

and become unconscious, or slumped over the wheel with all the symptoms of a heart attack. In such an emergency, what good is the ambulance waiting on shore if no one is trained to bring the injured skipper in?

It took me years to realize much of what I've written here. In all candor, I missed sharing a number of the experiences I should have known with our now grown teenage daughters. Sure, I let them sit in the helm seat, but only for a minute or two. They liked boating, but certainly not as much as they could have. Now they aren't home to teach. I even short-changed my wife. I pampered and fuddled over our various boats so much she was sure I looked upon them as great wooden or fiberglass gods. So much so, she was afraid to even get to know the boat, much less operate it, for fear something would happen to it and she'd be blamed. Gradually, I've changed and she's changed. She can run it and bring it in, but she never

volunteers to take over. Unintentionally, unwittingly, I robbed us of what should have been some of our finest shared times.

Thankfully, I did wake up in time to make sure our "newly teenaged" son becomes as much a boater as he desires. In fairness to myself, however, he did take a more active interest at an earlier stage than did the female members of the crew. Before you assume I'm harboring the male superiority complex, I attribute my son's outgoing approach to boating more representative of his personality than his gender. With encouragement that I failed to show the other members of the crew, my son could soon handle almost any boating chore, afloat or ashore. There are even areas where he already outshines his old man. My wife and other kids could have, too, had they been given the same chance.

It's been great seeing the youngster taking over more and more responsibility — and *enjoying* it. I still remember the day I gave him his modified "solo" cruise. He did the piloting, the navigating, the docking while I sat contentedly at the cabin dinette, conversing with my wife. So smooth was his operation I was in the cabin almost a full ten minutes before my wife realized I wasn't at the flybridge wheel. Proudly I informed her our son was the skipper of record for our 25-mile cruise. Although I did occasionally glance out the cabin windows as a safety precaution, I relaxed more than I ever had in all the years we've owned boats. When that cruise was over, I remember my son handing me the boat keys.

"Keep them till next weekend, *Captain*," I beamed. "You'll be taking us out again."

As we walked from the dock to the car, my wife slipped her arm around me and whispered, "Our son is growing up."

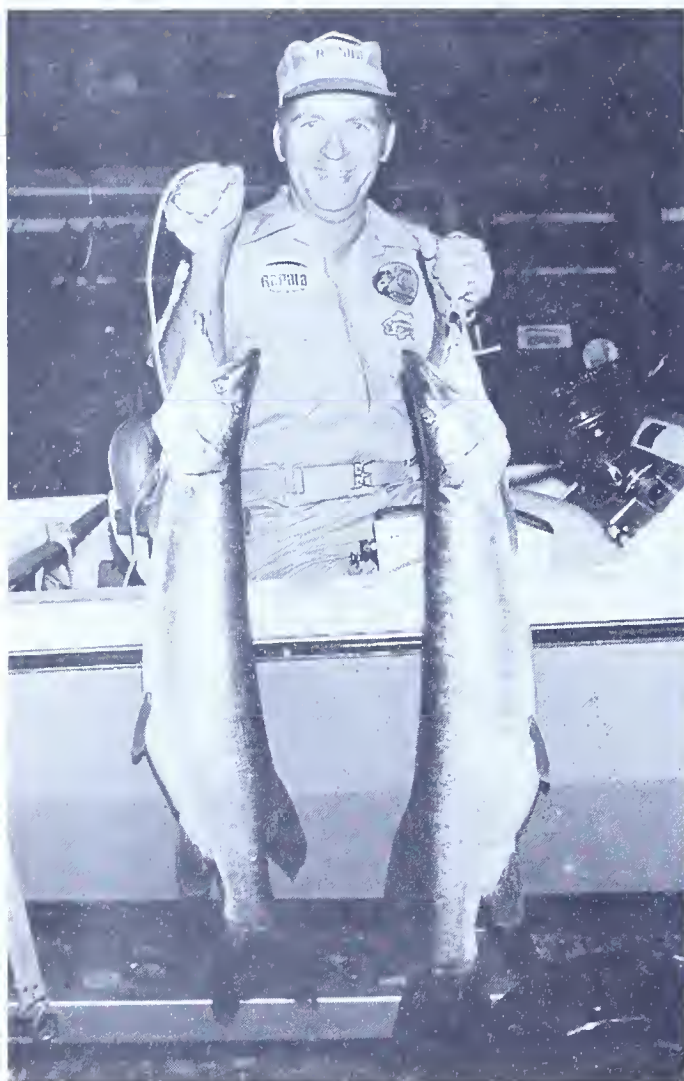
I nodded agreement.

"And so am I," I thought. "And so am I."

My silent thoughts were politely interrupted by a youthful but fast-maturing voice.

"If you'll stop for hamburgers on the way home, Dad," he said, "and both you and Mom are good, I'll let you sit at the *Captain's* table tonight."

Mysteriously, as he spoke, I heard the boat keys jingle in his pocket.



The Piscatorially Proficient Petruzzis —

Kinzua, or the "Allegheny Reservoir," if you will, continues to produce amazing catches like those shown here by a father and daughter combination. Jerry Petruzzi, left, had a good night fishing Kinzua's famed Chappel Fork, catching those two muskies he's holding and losing four more the same night! Not to be outdone by Dad, Paula Petruzzi, above, Jerry's 9-year-old daughter, latched onto that 29-inch northern pike! Jerry's pair of muskies measured 39 ½ and 41 inches. Both the muskies and Paula's northern pike fell for a trolled Swim-Whizz lure.

To find out what others are catching... where...and how, you'll need the *Angler*.

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JULY—1978

Angler

the
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TRUCK FOLLOWERS . . .

I think it is a safe generalization to say that many things that are stated on this page each month are tantamount to "preaching to the choir." People who are interested enough to subscribe to, and read, the *Pennsylvania Angler* probably are not problem people. Perhaps this observation is based on the reactions we get from the public. Most of the mail that we get in response to points made in the *Angler* are constructive and positive. In the last few years I can only recall three or four negative responses. One of them had to do with our putting a pretty girl on a cover of the magazine. I personally wrote that one off as just trying to pull our chain.

We have a serious problem and it is your problem, too. The Pennsylvania Fish Commission is part of this problem; in fact, a *major part* of the problem. It would be difficult to argue that we have not caused this. In other words, we have been the major promulgator of the phenomenon that bodes ill for the sport and its advocates.

The point of this sermon is that we have had more complaints in 1978 than in all of the other years put together. Our trout production has been fairly level in numbers over the last three years but the behavior of those who fish for trout has shown a marked degradation. Our field officers and those others on the staff who have spent considerable hours in the field report that 1978's trout fishermen, in general, have shown behavioral patterns that are enough to turn one's stomach.

Eliminate for a moment, if you will, the carnival atmosphere of "Opening Day." There are still Directors — and I am one of them — who will justify this three-ring circus for the immediate present with the excuse that this is the first real outlet for cabin fever. And from where the sun stands now, we empathize with fathers, sons, grandfathers and even the distaff who are not offended by elbow-to-elbow flailing of the water in pursuit of *their* limit of eight trout per day as a God-given right at the end of a long winter. More about that later.

Truck followers, and it seems to be the same relatively small group of several thousand people in the Commonwealth, have made a consecutive series of "Opening Days" intolerable to not only the landowners whose properties they devastate, but to their own peers — other license buyers who have the same rights and privileges in the angling fraternity as those who think that the only way to "get their *fair share*" is to follow the Great White Fleet.

How stupid, how selfish, how shortsighted it is to believe that, having bought an "expensive" \$7.50 license, the only way to get the daily limit to which one feels entitled is to follow a truck and throw everything one has into the water to catch the hapless hatchery creature before it has had a chance to take three swallows outside the raceways and orient itself to its idea of long life!

Landowners' fences have been burned; ornamental trees have been cut down; one person's front lawn became a parking lot for 67 cars! Landowners' families, their wives and children have been insulted . . . access and egress into farmers' properties have been absolutely ignored and reports of other examples of devastation to private property are thrown at us from all corners of the Commonwealth. The excuse that this is the first opportunity to cool the cabin fever is not the least bit valid when we start losing miles and miles of private access to public fishing . . . not when the anglers who are our basic support complain that fishing isn't the fun it used to be.

For those slobs who are giving us a *net loss* of available fishing water because of their manners — or lack of them — I promise that the Fish Commission's Law Enforcement personnel, already overburdened providing a myriad of services that you all have come to expect, are going to really clamp down on violations that are covered by statute and regulation. We need your help, too. We need to police the ranks of the fishermen and it wouldn't hurt some hard rock American citizens who are Pennsylvanians to turn in the license numbers and descriptions of the violators . . . even offer your services as witnesses in subsequent litigations to save something of the sport and the resources for future generations.

And for that part of the problem that has been caused by the Pennsylvania Fish Commission, I promise we are going to do our best to straighten out the monster and restore contemplative angling as the great soul-restoring sport that it used to be.

Ralph W. Abele,
Executive Director

Pennsylvania Angler

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Front Cover: Bill Caskey and Bob Heindl, both of St. Marys, seem to be having a ball crossing Elk County's East Branch Dam despite the breeze: See "Elk County's Sleeping Beauty," page 14. Photo by Bud Erich.

Back Cover: One of the Fish Commission's Allegheny County patrol boats, operated by Waterways Patrolman Gerald T. Crayton, on a routine Allegheny River patrol. Photo by Alan MacKay, PFC Bureau of Waterways.

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James F. Yoder, Editor

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TIPS ON MINNOWS —

I've read your magazine regularly for the last three years and enjoy it very much. I also get knowledge from it that helps me do a job easier and better.

This April's issue has an article, *Bait Up*, by Don Kingery. Now I know how to raise earthworms and I'm going to give it a try, thanks to the *Pennsylvania Angler* and Don.

The fisherman on the front cover seems to have a hold of a nice one. I imagine that's a minnow bucket hanging around his neck. I fish for trout 95% of the time with minnows. I fish Small Creek, the headwaters of Yellow Creek above Loysburg, sometimes through fields, or through wood and willow thickets, Clear Shade Creek at Oglestown and Cove Creek above Rainsburg. I tried to carry a minnow bucket but when you start bending and working your way through the woods and willow thickets, the darn thing is always in the way or else the water runs out and occasionally the lid falls off and you lose your minnows. I use small minnows, a red or black striper 1 1/4" to 1 1/2" is perfect and I string them on a 4-pound gut with a needle.

I like to start the day with 15 or 18 minnows. I carry the minnows in a pint whiskey bottle, clear glass so I can see through and I have a cork with a fine metal chain (take it off the bathroom stopper). The beaded chain is fastened to the top of the cork and around the neck of the minnow bottle. The beaded chain won't twist up and, when you pull the cork out of the bottle, just drop it and it hangs on the chain. I leave two hands to string my minnow and I don't lose the cork.

I also cut the cork handle on my 9-foot fly rod and glued into the handle a small, strong magnet. I use this magnet to fasten my double hook on while I use the needle to string the minnow. I take the hook off its magnet and fasten the needle to it while I fasten the hook to the 4-pound gut and the minnow. Then I lay the rod down, take the needle from the magnet and stick it in my fishing hat. This magnet saves a lot of hooks and a lot of needles.

Now to finish the story about the pint whiskey bottle with 15 to 18 small minnows in it. The secret here is the amount of water put in the bottle. I fill it about 2/3 full leaving some space for air. If you fill

the bottle full, your minnows will die in a half-hour's time. Fill the bottle from 1/2 to 2/3 full and carry it in your fishing basket and check it visually every once in a while (the hotter the weather, the more checking it takes).

If the minnows start to turn sideways, empty the water that's in the bottle and put in fresh creek water. This the most convenient way to carry minnows and when you fish 3 or 4 miles of creek in a day, it means a heck of a lot. The system's not hard to try out. You can fasten a string to the cork and the bottle for a tryout but I know it works for me, my son, and my buddies that I fish with.

I started my boy on minnows; but, when my dad started me a long time ago I started on worms. Often when I miss a nice trout I go around rolling logs and kicking up rocks looking for bait cause now I know exactly where the trout are laying and very often when you float a worm into them, they will take it. Hope this article helps someone the same as the article by Don Kingery on how to raise worms is going to help me.

RAY REININGER
Johnstown

To each his own, Ray. Lots of fishermen carry 0.473 liter (we've got to start somewhere!) whiskey bottles — you're one of the first we've heard of with minnows in his! We can't help wonder how many times you've slipped and broken one — isn't the "glass" idea a bit on the dangerous side?
Ed.

"LATIN LABELS" —

Enclosed please find my check for \$7.50 for another three years of the *Pennsylvania Angler* magazine. I see by my label that it's due to run out in May and by that time, if I'm able, I'll probably be trout fishing and do not want to skip the *Angler*.

I'm 66 now and retired (from my job — but not from the streams yet). I have been tying flies and fishing them for over 50 years (averaging 500-plus trout per season — killing about 50 a year for eating). This past season, having retired in '76, I had more time to go. I caught 728 and kept 46. Some were really nice, 15"-19" class, but I catch a lot of smaller ones too. All on flies, nymphs — hand-tied.

I fish mostly local waters, Northumberland, Montour, Snyder and Union County streams because I cannot afford long trips to far away places like the "good fishermen" which you read about. I think they must have a very good eye to be able to read the scales on the fish's back that say "3, 4, 5-pounds," etc. Otherwise, they only saw the fish when it jumped clear out of the water and took their fly — then

broke the tippet and got away. How would they know it was a mere 3-5 pounds? Looks good in print though and, after telling the story 40 times, they do have chance to grow. Besides, who would want to chance a sprained back from carrying the limit of 3 to 5-pound trout back to the car or camp? Quite a tale, I'd say. So, guess I'll just keep fishing local and be satisfied with what I catch.

I teach fly tying when I have anyone who wants to learn... been teaching for 45 or so years. I used to be sponsored by sporting goods store or someone to put class on before season. Anywhere from 20 to 25 to over 70 people (young and old) per class. Many of them became real good tiers, but some others gave up because of not enough patience, jobs, etc.

Well, anyway, keep up the good work and good fishing.

L. E. RA
Sunbury

P.S. I prefer to catch the bugs and study them for stream patterns. They are more real than some of the patterns listed in the books — work better too. After over 40 years, I have a couple of charts which I made up on the hatching, and give or take a few days with weather, I know what to look for. I do not speak Latin, so I call them by what they are — March brown, black caddis, etc. Then when I tell someone what is "on" they know what I'm talking about. I wish they'd do the same in those stories and the books.

Don't feel bad about not "speaking" Latin, Mr. Ray. Except for a go at *Adeste fideles* each Christmas, not too many other folks do either.

You are not the first to have written to us voicing concern about being "bugged" by Latin names attached to "common" insects. So, for the benefit of all who share your concern we turned to the team of Pilchard and Stronsett, long noted for making the best of bad situations and vice versa.

The original intent of the binomial nomenclature (a system of giving a plant or animal two terms — the first of which identifies the genus to which it belongs, the second the species itself) was to have folks all over the world calling critters the same thing.

Would you believe the whole idea was conceived by a Swedish botanist by the name of Linnaeus — over 200 years ago! Latin was, and from that day has been, the language of the scientific community and still serves well the purposes of that astute group of scholars. Sincere fly tiers, too, use the Latin to differentiate between some close relatives, i.e., different, yet similar species within the same genus.

On the stream, however, it adds a great deal of uppityness to toss about an *Ephemeroptera* or an occasional *Trichop-*

era. Whether or not you know what you're talking about matters little — it still adds a lot of class! As C. Pilchard (originator of the Mashed Owl) once said, "It also helps if you wear a tweed hat and smoke a pipe."

The trouble with "calling them what they are," as you suggest, is that *what* they are so often depends upon *where* you are. This is particularly true of local names given to fish, more so than insects, but it does prove the validity of having one universal name. A good example is the walleye. In the vocabulary of many it is the walleyed pike — and pike it is not. Midway up the Susquehanna it becomes the Susquehanna salmon — and a salmon it is not. I've heard old-timers up in Bradford County call it a yellow bass" — and a bass it is not. Some Canadians allegedly call it a pickerel. Call them what you will, that tasty, flaky white-fleshed critter is *Stizostedion vitreum vitreum*, take it or leave it!

Somewhere down South, they tell me, bass are called trout . . . they call our sunfish "bream" . . . it goes on and on. To avoid the confusion and unavoidable water-side controversy, I simply settle for a mess of *Ictalurus nebulosus*. Whoops! Them's mulheads! Ed.

WHICH WAY?

I'm a little confused on hooking my favorite bait, the worm. While reading the *'Angler's Notebook'* in your March '78 issue by Richard Williamson, he stated in his column and I quote, "Running a hook through the collar of the most lively night crawler will kill it. Instead, insert the hook in the head just in front of the collar. The crawlers will live and will be able to make educative wriggly motions in the water," end of quote. OK, I can live with that, but, in April's issue, "Bait Up," by Don Kingery states an entirely different idea to bait a worm or earthworm and I quote, "There are a variety of ways to hook earthworms but most people agree that the best are the ones that keep the worm on the hook securely yet allow it to wiggle as much as possible. The clitellum, or 'band,' is the toughest part of a worm and worms should be hooked through it whenever possible," end of quote.

My question is what is the right method in hooking the worm for a good fish or do I have to go back to biology and define the difference between earthworms and night crawlers?

GLENN REICHARDT
Philadelphia

First of all, the difference between earthworms and night crawlers is the same as the difference between "cars" and "Fords." Webster says a night crawler is "a large earthworm found on the soil sur-

face at night."

Now, what is the *right* method? As our two columnists have proved, there is no single method set down by any annelidan authority as being absolutely the *only* way to hook a worm. If you'll examine both authors' statements, there is really no great controversy: author Williamson says inserting the hook through the collar will kill the worm; author Kingery merely states that it is the toughest part of the worm and a good place to *hook one securely*. My experience has shown that both are correct: I've hooked night crawlers through the collar and, although they remained on the hook longer, they did die. Conversely, I found that hooking them delicately through their "head" brought quicker strikes — maybe because they remained lively longer. But, I've lost many on the first cast (hooked in this fashion); and, if the first cast was successfully executed but brought no strike, they seldom lasted for many additional casts. Ed.

NOT SO!

Dear Mr. Keith:

I read with utmost interest your letter relative to the outcome of stocking tiger muskies in your section of the Juniata River as published in the *Pennsylvania Angler* ("SCAVENGER" — April, 1978).

When the Commission stocked muskies in the Lewistown-Thompsontown-Newport area of the river in 1965 or 1966, I, like you, said, "There goes my bass and panfish fishing." Not so . . . we kept right on catching smallmouth bass and panfish. Our only problem is that the 50-inch muskies are getting away.

The writer has filleted at least 75 legal muskies since 1970 and 98% of the time the stomachs are empty or I find the skeletal remains of an unidentifiable fish. Have found in one an 11-inch bass, in another a 10-inch "mud cat" and in another a 12-inch fallfish.

There has been absolutely no decrease in the bass population. For example, this past summer no problem was encountered in catching one's limit of bass from 10" up: During the last two weeks in December, 1977 we musky fishermen caught at least 16 legal muskies in one eddy one mile below my residence. One day I personally lost six heavy fish and kept two legal ones. At the same time we were catching 17- to 21-inch smallmouth bass in the same eddy.

You and your children can look forward to the day when you will be telling more tales about the muskies that got away.

My personal problem is one I named "Elmer." I have lost him at least once a year for the past six years. He is now in the 50" bracket. In the same area is "Elmer, Jr." He is in the mid-40" level.

Someday you will have the same experience and still catch all the small-mouth bass as you do at the present time.

GEORGE E. HOHENSILT
Thompsontown

STILL FINDS TIME!

Enclosed is a renewal subscription to the *Pennsylvania Angler*. I enjoy the *Angler* tremendously and commend you on your articles written. Even though I am in college, I do get a chance to fish some of my favorite waters in and around Allentown, Pa. I would appreciate an article written on three of my favorite lakes near this area, that being Nockamixon Lake, Beltzville Dam and Leaser Lake. I fish these waters often and seek some advice on where and how to fish these waters more efficiently. Thank you so very much.

NOEL B. SELL
Allentown

THANKS

About one year ago one of my hunting and fishing buddies became a deputy waterways patrolman. He took me to the fishing EXPO, pushed me into buying the *Angler* (the best buy of the year).

Many times I tagged along on foot patrol, helped maintain posters and stocked trout. It is a fine job the Commission is doing. Keep up the good work. My sincere thanks to Deputy Robert C. Perry (Monroe County) and the entire Pennsylvania Fish Commission.

ANDREW C. MILAZZO
Stroudsburg

MOVING?

Send us both your
old and new addresses
with both zipcodes.

"TOPS"!

I was shocked when I read April's "Leaky Boots." "SCAVENGER" is a hard name to attach to one of the greatest gamefish I believe ever introduced by the Fish Commission in Pennsylvania waters — bar none. It is apparent that Mr. Keith never looked into a musky or tiger musky whose minimum legal fighting specs. would go 30" by about 5½ pounds. I have caught muskies and pike and just wanted to let you know that this angler thinks they're tops.

JOSEPH HYDE
Philadelphia

MEALS from the CREEL

by Arthur J. Michaels

The Lure of the Skewer

"Kali Orrexi!"
"Afiyet Olsun!"
"Itadakimas!"

Whether it's Greek, Turkish, or Japanese, you can wish your family and friends "Good Eating" this summer with a hibachi, a few dynamite fish recipes — and skewers.

That's right, skewers. Skewer cookery is popular all over the world. In Turkey, where the familiar Shish Kebab originated, two Turkish words: "sis," meaning "skewer" and "kebab" meaning "meat," describe the practice of the mountain people of the Caucasus, who for thousands of years simply put meat on their swords to roast over open fires. Today, a "kebab" has come to mean any kind of fish, meat, or poultry impaled on a skewer and roasted over an open fire.

Besides their popularity in Eastern Mediterranean countries like Turkey, Iran, Iraq, Lebanon and Syria, skewered meat cooked over an open fire is also popular in parts of India, and collective barbecues are popular in

the Orient, around which guests cook skewered delights.

And this is the key to your fish kebab — you let your dinner guests cook their own skewered treats over your hibachi. The formula for success is simple: you provide servings of bite-sized fish, fruit, and vegetables, and let your guests skewer these goodies for roasting over your red-hot grill. And on a summer night, there's no scorching-hot oven to make your house uninhabitable. The cleanup from your fish kebab is minimal too.

But before you run out to fire up your hibachi, observe a few fish kebab no-no's. Make sure, for instance, that all the food to be skewered is the same size. Different sized foods on the same skewer is a no-no because they usually require varying cooking times. So all of the kebab foods you offer should have the same cooking times and be cut to the same size.

It's also a no-no to skimp on sauces and marinades. Some kebabs require an initial marinading. Then, while the kebabs cook on the grill, they need additional basting and brushings with sauce. And when the kebabs are ready for serving, they still can be dipped in the sauce before eating. So, when you prepare marinades and sauces make more than you think you'll need.

Just because you've prepared lots of marinade though, it's also a no-no to overcook your fish kebabs. If you do, they'll be flavorless and nutritionless. Cooking times for kebabs seem deceptively short, so don't be tempted to overcook a kebab.

Besides overcooking, using short skewers is a no-no. Short skewers a

few inches long are used to fast poultry or pieces of meat. If you buy skewers, get l-o-n-g barbecue skewers — the longer, the better.

Now take a big bite of the lure the skewer with these recipes:

POLYNESIAN SHRIMP KEBAB

36 large shrimp (shelled and deveined)

36 pieces cubed pineapple

12 strips raw bacon

8 medium tomatoes, fresh and ripe

8 medium raw onions

6 fresh green peppers, parboiled

Cut each bacon strip into thin pieces about an inch long. Slice the tomatoes and onions each into four wedges. Cut the pepper into 1½-inch pieces. Arrange on skewers in the order: one pineapple piece, a shrimp, one piece of bacon, a tomato wedge, one raw onion wedge and a piece of pepper. One serving consists of five or six complete arrangements on a skewer.

When all the skewers are finished, marinate them for about an hour in this:

6 ounces oil

10 ounces vinegar

10 ounces pineapple juice

6 ounces soy sauce

1½ ounces pickling spice

6 teaspoons salt

Broil the skewered food on the grill for about 6–9 minutes, or 3–5 minutes each side. Heat up the leftover marinade and brush it on while the kebab is cooking, or pour the marinade on when served. Pass the plates, but you can eat the kebab right from the skewer. Serves 6.

TROUT KEBAB

2 brook, brown, or rainbow trout (3–4 pounds each)

8 ounces lemon juice

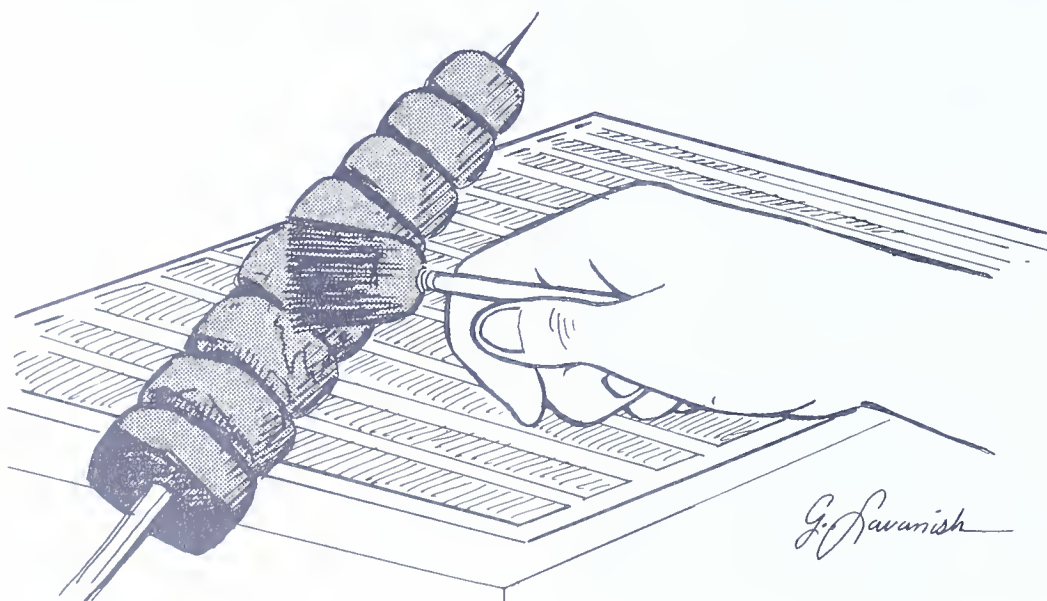
butter

one teaspoon salt & pepper

2 dozen bay leaves

Clean the trout. Prepare fillets, but leave the skin on. Cut the fillets into 1½-inch squares and put them in a shallow baking pan. Pour the lemon juice on the fish pieces and refrigerate for two hours. This will firm the trout flesh so that you can skewer it.

After two hours, drain the pan, and skewer the fish pieces, about ten to a skewer. Put pieces of bay leaves between the fish on each skewer. Brush the fish with butter, salt, and





pepper to taste, and cook your trout kebab over a grill for about 9-10 minutes, or 4-5 minutes each side. Keep brushing the fish with butter. Serve with steaming buttered rice and green salad. Serves 4-6.

RESTO SCALLOP KEBAB

*One quart shucked, raw scallops
12 slices uncooked bacon
one cup melted butter*

Cut the bacon into two-inch strips. Skewer the scallops, alternating with pieces of bacon. Paint the scallops and bacon with melted butter, and cook over your grill until the bacon is crisp. Serves an army of eight.

ALMON KEBAB

*2 pounds fresh salmon fillets (or any firm-fleshed fish)
5 small zucchini squash
one small eggplant*
Remove the skin and bones from

the fillets and cut them into one-inch chunks. Cut the eggplant into eight or nine wedges and slice each wedge into inch-long pieces. Alternate fish, eggplant, and zucchini on each skewer. Cook over hot coals until fish flakes. Baste the kebab with this:

*3 cups soy sauce
3 cups dry Sherry
3 tablespoons safflower oil*

Put this baste on the table and allow your guests to dip their cooked kebabs as often as they like. Serves 6.

MARINADE (for shrimp, lobster, or scallop kebabs)

*One cup pineapple juice
one cup brown sugar
4 tablespoons lemon juice
2 tablespoons soy sauce
8 tablespoons cooking oil*

Mix these ingredients together in a large bowl for a marinade, sauce, and dip for a shellfish kebab. Serves 8.

You can allow your guests to eat their kebabs hot off the skewer, or you can provide a more formal table setting at which your guests can remove the fish from the skewers onto plates. But to authenticate your fish kebabs even further, serve pita bread with them.

Often called, "peda" or "pocket" bread, you and your guests can sandwich cooked kebabs hot from the grill with this traditional mid-Eastern bread. You can buy pocket bread at mid-Eastern delicatessens and some large supermarkets, mostly in metropolitan areas. Besides making sandwiches with pita bread, break it into pieces and soak up leftover marinade, or catch plate drippings with it.

One final fish kebab consideration is this: serve up plenty of napkins with your sizzling fish kebabs, and the belly patting and satiated smiles will last a long, long time.

Bait Up

by Don Kingery

illustrated by

Ray Piccolin

CRAYFISH

Next to worms and minnows, crayfish are about the most popular bait around. They are easily collected, easily kept, and appeal to every type of gamefish. Crayfish are the largest freshwater crustaceans in North America and have a variety of local names: crawfish, crawdad, crab, and soft shell being the most common.

Crayfish are found in springs, brooks, streams, rivers, lakes, ponds, and in burrows in damp lawns and meadows. During the day seek them under rocks and in aquatic vegetation and debris. Large rocks will often hide two or three individuals. At night they come out to forage along the bottom and can be easily caught with the aid of a flashlight. Crayfish walk forward, but swim backward (fast!); so, when catching them by hand, always approach them from behind. Keep your hand flat and slowly move it to within three or four inches of the target. Then, with a quick lunge, gently pin the crayfish to the bottom. Now slide your hand down the body until you can grab the crayfish around the middle with no danger of getting pinched.

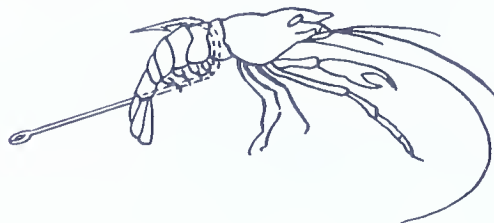
When using a net, hold it about six inches behind the crayfish and "attack" from the front. The crayfish will immediately scoot backwards into the net. Crayfish can also be seined, or trapped in a wire minnow trap. Bait the trap with meat scraps and leave it overnight on the bottom of your favorite crayfish hole. An umbrella net will take crayfish. Bait it, leave it on the bottom for a few hours at night, then slowly raise it. Individual crayfish can be taken by tying a piece of meat or a minnow on a string and placing it in front of them. When they grab the bait, slowly and smoothly lift it and the crayfish out of the water and onto the shore — they will seldom let go.

Incidentally, although only the tails are eaten, large crayfish taste every

bit as good as their saltwater relatives, the lobsters. Drop them live into a pan of boiling water and boil them for five minutes. Break off the tail, shuck off the shell, and pull out the intestine (the mud vein that runs down the center). Eat them like shrimp, with a little butter or sauce. (I don't want to discourage you, *but, make sure you boil them for at least five minutes.* Crayfish are thought to be the intermediate host to a species of lung fluke that parasitizes man and other carnivores; the parasite being transmitted in the muscle tissue of *raw or poorly cooked* crayfish.)

Like insects, crayfish must periodically shed their exoskeletons (shells) as they outgrow them. Just before this occurs the crayfish is called a "peeler," and is characterized by a dirty shell with orangish bands on the tail. These orangish bands, visible when the tail is bent, are simply the new shell showing through the old one. After shedding (molting) its exoskeleton, the crayfish is commonly called a softshell. It will stay soft for about three days and it is during this time that large crayfish make the best bait, as they are more vulnerable to attack by fish (small crayfish are good bait anytime). Softshells can be kept soft for several weeks by keeping them *near* freezing in a refrigerator. Put a layer of wet paper towels in the bottom of a container, then a layer of soft shells, then another layer of wet towels. Alternate layers until you run out of crayfish, then put a layer of towels on top.

Hook crayfish (hard or soft) through the tail with the point of the hook protruding through the back and fish them on the bottom. You will generally have the best success fishing them in riffles at dawn and dusk.



Small crayfish, up to two inches, can be fished on bobbers around logs, stumps and other likely bass hiding places.

Crayfish will keep for several days in a baitbox filled with damp moss, peatmoss, or wet leaves — *as long as they are kept cool.* They will keep

longer if you occasionally put in some crushed ice. Crayfish will keep forever in an aquarium. Keep the water oxygenated and feed them bits of meat or bread. They can also be kept in minnow buckets or regular buckets but unless the water is filtered, it must be changed daily. An underwater wire cage will keep crayfish as long as the weather is warm. When keeping a large number of crayfish, it is recommended that you remove the claws to keep them from fighting among themselves.

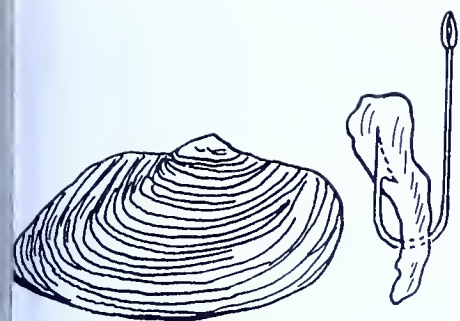
One of the neatest tricks this author ever discovered was keeping crayfish in a wire cage suspended in the reserve tank of a flush toilet. The average toilet is flushed often enough each day to supply them with clear water. And, since the water in the tank comes from a well or underground supply pipe, it is usually cool and retards the crayfishes' metabolism to the point that they only need to be fed once a week.

Dead crayfish are best preserved by freezing. To give them a more natural appearance, insert a toothpick lengthwise through the body. Peeled crayfish tails are excellent bait for bottom-feeding fish.

CLAMS & MUSSELS

Mussels and clams, or shellfish, as most anglers call them, are found in nearly all types of freshwater habitats but are most abundant in the larger streams and lakes. The shells exhibit a variety of shapes; oval, elongated, trapezoidal, and sub-circular, and the inside colors vary from silvery white through pink to various shades of purple. The external coloration generally varies from yellowish-brown to black.

Freshwater mussels generally lie half to wholly buried in the bottom substrate, often with only the incurrent and excurrent siphons showing. They use these and their gills to strain from the water the plankton and organic debris on which they feed. Mussels generally occur in greatest abundance and variety in alkaline waters (waters containing a high degree of dissolved calcium). This is due to the fact that calcium carbonate is the main constituent of the shells. Search for them in shallows and riffles where the bottom is composed of sand, gravel, or a mixture of both.



Collect them by wading and hand-picking in the shallows, or, with a long-handled rake from the deeper areas. The shells can be cracked open, fried open, boiled in water until they separate, frozen, or simply left out of water overnight. Cut the meat into chunks and fish them on or near the bottom. The meat can be frozen for future use and will keep indefinitely. Catfish, bluegills, bullheads, suckers, and perch are among the fish that feed on mussels.

Adult freshwater mussels will thrive in an aquarium as long as it is kept well aerated and they have lots of food. But, due to their complex life cycles, most are difficult to propagate in captivity. Depending on the species, mussels reproduce in one of two ways. They may be by "giving birth" to fully formed miniatures of themselves or by releasing many minute, clam-like larvae called glochidia. Some of these larvae lie on the bottom, waiting until a fish brushes against them, then clamp onto its body or fins. Other species are taken into the fish's mouth with water and lodge in the gills. The tissues of the fish soon begin to grow over the glochidia and, in a day or two, it is fully encased, forming a small capsule. The larvae exists as a parasite on the fish for a period of ten to thirty days, breaking out of the cyst at the end of that time and falling to the bottom where it completes the juvenile stage and grows into the adult. Some species of mussels live for fifteen years but most have a life span lasting only slightly over a year.

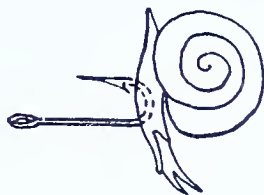
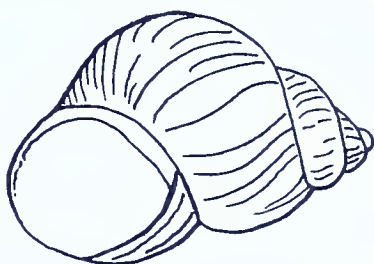
SNAILS

Snails are found in almost all aquatic habitats: lakes, streams, rivers and ponds all sharing their characteristic species. The colors vary — grays, tans, browns and blacks predominating. A few species are yellow or green and some have bright-colored bands on their shells.

Freshwater snails are primarily vegetarians, "grazing" on algae as they crawl over the substrate. The rest are scavengers, feeding on dead plants and animals.

Snails are predominantly found in the shallows, serving as food for such fish as suckers, perch, bullheads, catfish, bluegills and other sunfish. Since they hibernate in winter, fishing with snails is strictly a warm weather proposition. Unless you stock your aquarium or gather them in summer and freeze them, you're out of luck. Few bait shops stock snails.

Fish them with or without the shell, but fish them on the bottom for best results. When using shelled snails, cracking the shell on larger specimens to release some of the juices will help



attract bottom-feeding fish. In shallow waters, collect snails by hand-picking; in deeper waters, use a long-handled net to scoop along the bottom. Terrestrial snails will be found on the undersides of boards and logs in damp areas. Keep aquatic snails in an aquarium. They will thrive and reproduce well, feeding on the algae that grows on the sides of the tank. If you just want to keep them for a few weeks, store them in a jar of water in the refrigerator. Land-dwelling snails keep best in a terrarium.

LEECHES

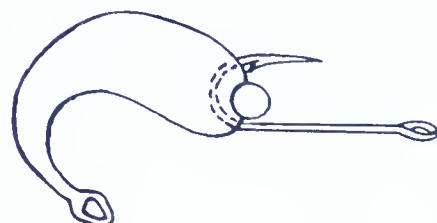
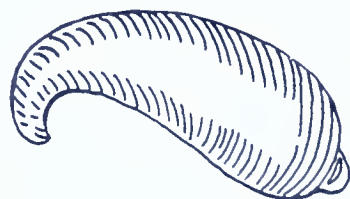
Mention leech to the layman and he automatically responds with "bloodsuckers." Actually, few of the forty-four species in North America will suck blood from warm-blooded animals. Most are scavengers or predators, feeding on aquatic organisms smaller than themselves. The coloration of leeches varies

radically. They may be bright or dull shades of green, brown, red, black, orange, or yellow. In addition, many have stripes, spots, or mottled patterns on the backs; however all are easily recognized by the suckers located at each end of the body. Few specimens will exceed five inches in length, although some species are reported to grow to a length of eighteen inches.

Most leeches lay their eggs in cocoons which they fasten to the substrate. Some species bury them in the mud along shore, so build a little sandy island in your aquarium to oblige them. Leeches can also be stored in jars of water in the refrigerator for long periods. Hook them through the body or through one end and fish them just off the bottom. Smaller specimens will take panfish and bass when fished on a bobber near underwater logs and rocks.

Hirudo medicinalis (the medicinal leech) used to be available in drug stores and cured many a black eye in its time. Today, drug stores stocking leeches are few and far between, so if you want to try fishing with them, you have to gather your own. Leeches prefer slow streams, ponds, marshes, and lakes. Seek them under rocks, logs and other debris, using a small dipnet or hand seine to capture them. "Bait them" by placing a dead, bleeding turtle or frog underwater in a slow moving current. Another trick is to rub bloody meat or raw liver over your hip boots and wade slowly through a marsh. The leeches attach themselves to the boots and can be easily captured.

If leeches are to be kept in an aquarium, it must be kept clean and cool. The water need not be deep, but the aquarium must be screened, and should have a sloping bank of sandy soil because many species like to leave the water and crawl around. The type of food will vary with the species.



Beaver County's

ANNUAL RIVER REGATTA

*photos by Russell Gettig
staff photographer*

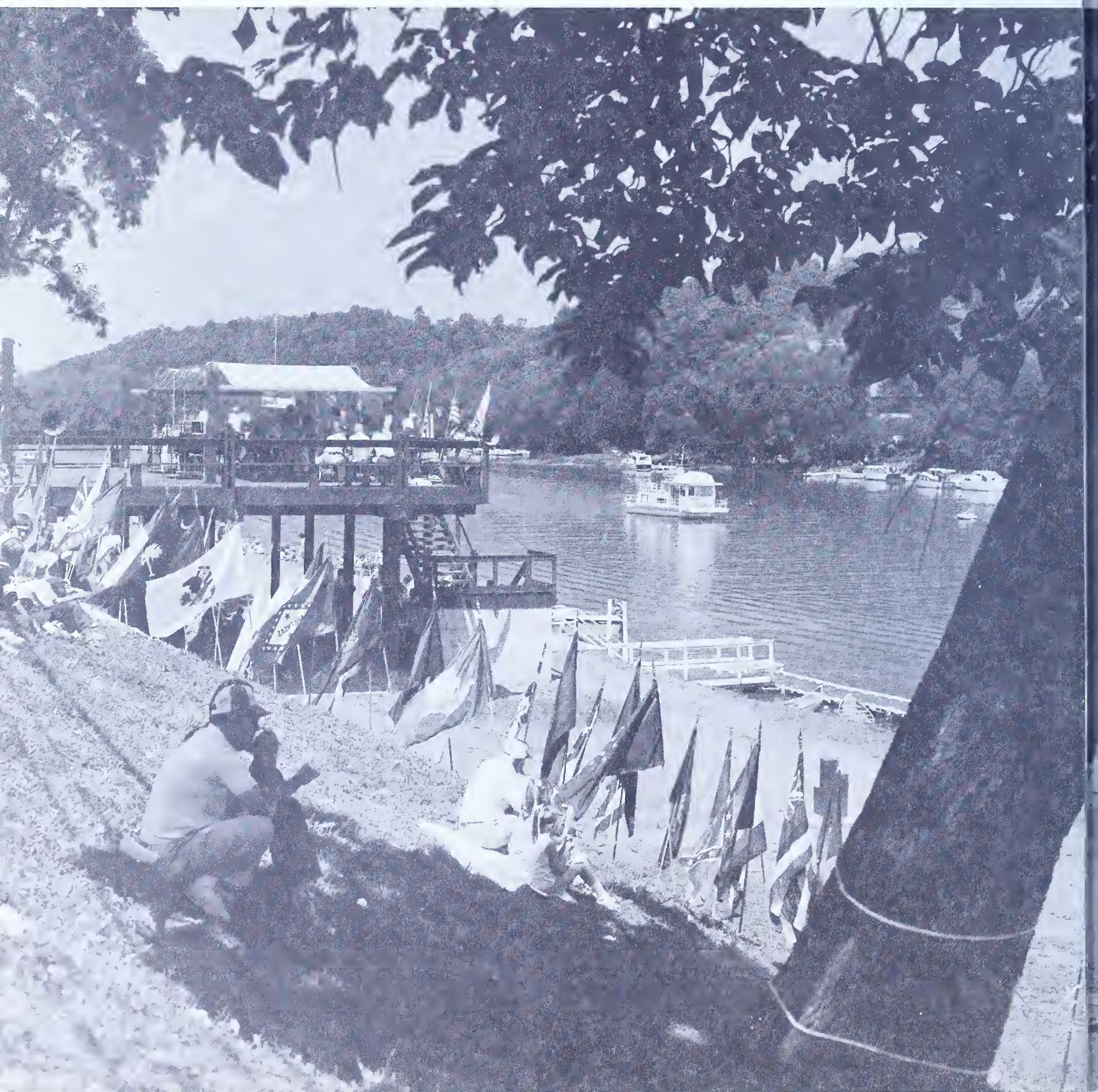




Photo on the opposite page shows the Regatta Deck, in Bridgewater Riverside Park, Bridgewater, Pa.
 Above: a view of some of the boating activity on the Beaver River with the town of Rochester in the background. They came from far and wide, from all walks of life, to view the River Regatta.

How do you organize an affair that in three short years eventually draw 100,000 to the water's edge? It started out as part of the Nation's Bicentennial celebration, attracting 50,000 in its first year, and evolved into an "Annual Beaver County River Regatta," due

to the success of the '75 & '76 events. From a humble beginning, initiated by Bicentennial Chairman Ed Sahli and a handful of very interested boaters, the committee applied for and received a nonprofit charter. In 1977 a park amphitheater was added

Looking back across the river, toward the Regatta Deck, the exceptional turnout of viewers is seen.



This vessel took home "all the marbles" . . . well, some of them



The "E. L. Thumper," owned by Jack Bedeck of Pittsburgh, is an "old hand" at competition. It took First Place in the Oakmont Yacht Club Parade; First Place in the Beaver County River Regatta Day Parade and Third Place in the Night Parade; First Place in the Pittsburgh Boat Parade; and, Last Place in the Heat and First Place in the Handicap Sternwheel Races at Marietta, Ohio.

and an all-summer program begins with performances by the American Wind Symphony, some outdoor theater presentations, band concerts, crew races and, eventually, the River Regatta. The committee works all year long and over 200 people work diligently on Regatta Weekend.

The 1978 Regatta will be held August 19th & 20th. Early Saturday morning, spectators begin to gather on the Beaver River. Boat parades, power boat races, ski shows, exhibits, tours and fireworks all add up to (please turn to page 12)

That happy quartet in the photo at right consists of, from right to left, Ruth Stevens, the Regatta Director, paying a visit to owner Jack Bedeck (he's the one with the hat!) and two of the E. L. THUMPER'S normal crew of eight hands.



The unique vessel shown below is the CLAIRE E. In 1965, Gene and Claire Fitch purchased an old towboat, THE DIESEL, and two years later the beautiful CLAIRE E made her debut. She travels all the inland waterways, making friends wherever they are moored. Gene is president of the American Sternwheel Association. That's some vessel!





a gala weekend for boaters from far and wide.
 (Editor's Note: Special thanks to Ruth Stevens, Regatta
 Director, and Waterways Patrolman Don Parrish for
 supplying the *Angler* with the material for this report.)

*Above: the Beaver Valley Sky Divers demonstrate their
 expertise with some pinpoint landings.
 Below: one of the many entries in the Day Parade.*





Utilizing the river and the festive occasion for all it was worth, fishermen had their own contest.



The East Branch Dam of the Clarion River . . . Elk County's "SLEEPING BEAUTY"

Story & Photos
by Bud Erich



Fish Commissioner Sam Guaglianone, right, and Jack Eweris, Area Resource Manager of the Army Corps of Engineers, admire scenic beauty of the Straight Creek/South Fork cove, the scene of many sizeable musky catches.

Compared to other large bodies of water in the state of Pennsylvania, the East Branch Dam of the Clarion River in Elk County is probably on the low end of the list in popularity. In just about all aspects of life, if something isn't popular then there must be something wrong with it. We set out to find out what was wrong with the East Branch of the Clarion.

It must be the fishing, we thought. After all, if a body of water isn't enjoying its share of popularity, there must be something wrong with the fishing. Boy, were we wrong! A check on the list of fish stocked in the dam is much too lengthy to print here. But I will tell you this — hundreds of thousands of fingerling brook, brown and rainbow trout have been introduced into the dam since 1971, including over 100,000 brook trout fingerlings in 1977 alone. And, every year there are preseason and inseason stockings of legal sized brook trout.

Trout, though, isn't the only fish available. The lake has a variety of

fish including muskies, walleyes, yellow perch, bluegills, smallmouth and largemouth bass, suckers, smelt and bullhead catfish. As an article in a local newspaper, the St. Marys Daily Press, stated: "You name it — you can just about catch it here." And just last year, 1977, something new has been added, 9000 lake trout were introduced! Not many bodies of water have the desired depth, temperature and oxygen to support lake trout — the East Branch Dam is believed to be one of them.

Muskie fishing has just started coming into its own in the past several years when legal sized monsters were being pulled from their hideaways within the lake. About 50 legal muskies were taken in 1977, including a 39 $\frac{1}{2}$ -incher.

Since the fishing is here, then something else must be wrong. It must be the facilities. Checking into this proved us wrong once again. At the south entrance to the reservoir, near the dam itself at Glen Hazel,

there are 42 fee areas which include water, toilet facilities and refuse disposals for \$2.00 per day.

As we toured this area, Jack Eweris, Area Resource Manager, Army Corps of Engineers, said, "We just sort of weaved the camping area through the woods trying not to disturb the natural setting." In this same area there are also sites for tent camping at no cost.

Farther up the dam at the north end is the Elk State Park where there are 90 campsites owned and operated by the state. This area is locally known as Instanter because of a town once there, or Seven Mile because of a stream by that name which enters the dam at the northern point near the McKean County line.

In this area there are also picnic tables set up at vantage points to give visitors a beautiful view of the lake as they munch their lunch.

Good fishing and great facilities! What then is the problem? I was thinking . . . maybe the scenery? But



Trout stocking at the East Branch Dam attracts many followers; stocking by boat assures good distribution throughout the lake. Waterways Patrolman Bernard Ambrose, below, hefts a netful aboard one of the craft pressed into service for the across-the-lake stocking. Volunteers enjoy assisting in the stocking effort.



Those nets of trout will eventually come to the nets of anglers, one by one, promising many hours of angling pleasure and as many hours of "tale telling" about the big ones that got away. That brook trout, below, is just a sampling of the fishing in store up in Elk County's East Branch Dam of the Clarion.





"Water, water everywhere . . ." and not a soul in sight. A scene that often greets Waterways Patrolman Ambrose on his patrols of the East Branch Dam, a beautiful but underutilized angling, boating and camping resource.

heck, I've seen it myself and this is one beautiful lake. Jack Eweris, who is in charge of the East Branch, Kinzua Dam, Tionesta Dam and Woodcock, said this is one of his most beautiful areas.

Fish Commissioner, Sam Guaglianone, explained, "What I like about this lake is it's no monster," then he quickly added, "but, it's no baby either!"

If one were to steer his boat into the Straight Creek/South Fork cove at the northeast side of the lake, he could easily get the feeling that a moose might step from the timber into the grass and weathered stumps of the cove. I know I did — the area is that striking. To top things off, several large muskies have been taken from

this area.

Bernie Ambrose, Elk County Waterways Patrolman whose duty it is to patrol the East Branch Dam, is very optimistic about the lake's potential and figures the big problem is the lack of use for fishing, boating and other recreation. "More people should use it," he said, "it is a wonderful recreation area, but we need more people."

If the East Branch has all these things in its favor then there must be other reasons for its lack of use. And I feel there are several: one being the lack of major publicity which hopefully can be corrected here. Another is the fact that the area was once polluted, therefore people avoided it. This problem has been corrected by a lime machine plant on the Swamp

Creek section of the dam, costing well over a million dollars, where the water is neutralized before it enters the reservoir.

Another big reason for lack of use could be that the dam is located away from any major highways and, even though it can be reached easily, many people don't know it's there. By checking a Pennsylvania transportation map you will find the East Branch can be reached off Routes #255 and #219 at the towns of St. Marys, Johnsonburg and Wilcox.

But, you know, maybe we should just keep this secluded area to ourselves and not tell anyone about it. After all, if we get too many people here they just might wake up this *Sleeping Beauty*.

Meanwhile, back at the "Branch," our two canoeists featured on the cover continue their laborious trip across the pond, battling the wind and a light chop. Bill Caskey, forward, grimaces while Bob Heindl, aft, seems to be enjoying the entire trip! Both boaters are from the town of St. Mary's, not too many miles from the dam.





Powerboating Possibilities for Pittsburghers

by Julia M. Gilman

Pittsburgh has an underground cult, rather, an "overwater" following dedicated to the pursuit of speedy water sports. The highest concentration of these individuals can be found at the annual boat show in the Civic Arena, usually held in February. There one will find motorboats of many sizes shown by some of the thirty plus dealers located in and around Pittsburgh. Local boat enthusiasts can be seen in abundance, all planning their strategies for trading up.

As an out-of-towner recently relocated to the area, my family questioned the advisability of owning a boat in Pittsburgh. At first glance it seemed there were no nearby lakes and the only place to use a speed boat was the rivers. We had heard the rivers were polluted and thought it would be dangerous to boat on the

rivers because of the currents. Still, we were unwilling to give up the dream of owning our own motorboat, so we spent one summer visiting all the lakes within trailering distance of Pittsburgh to see if we should purchase a boat.

In our survey we limited the lakes to those within three hours' traveling distance of Pittsburgh. Also, only lakes allowing at least 65 horsepower motors were visited.

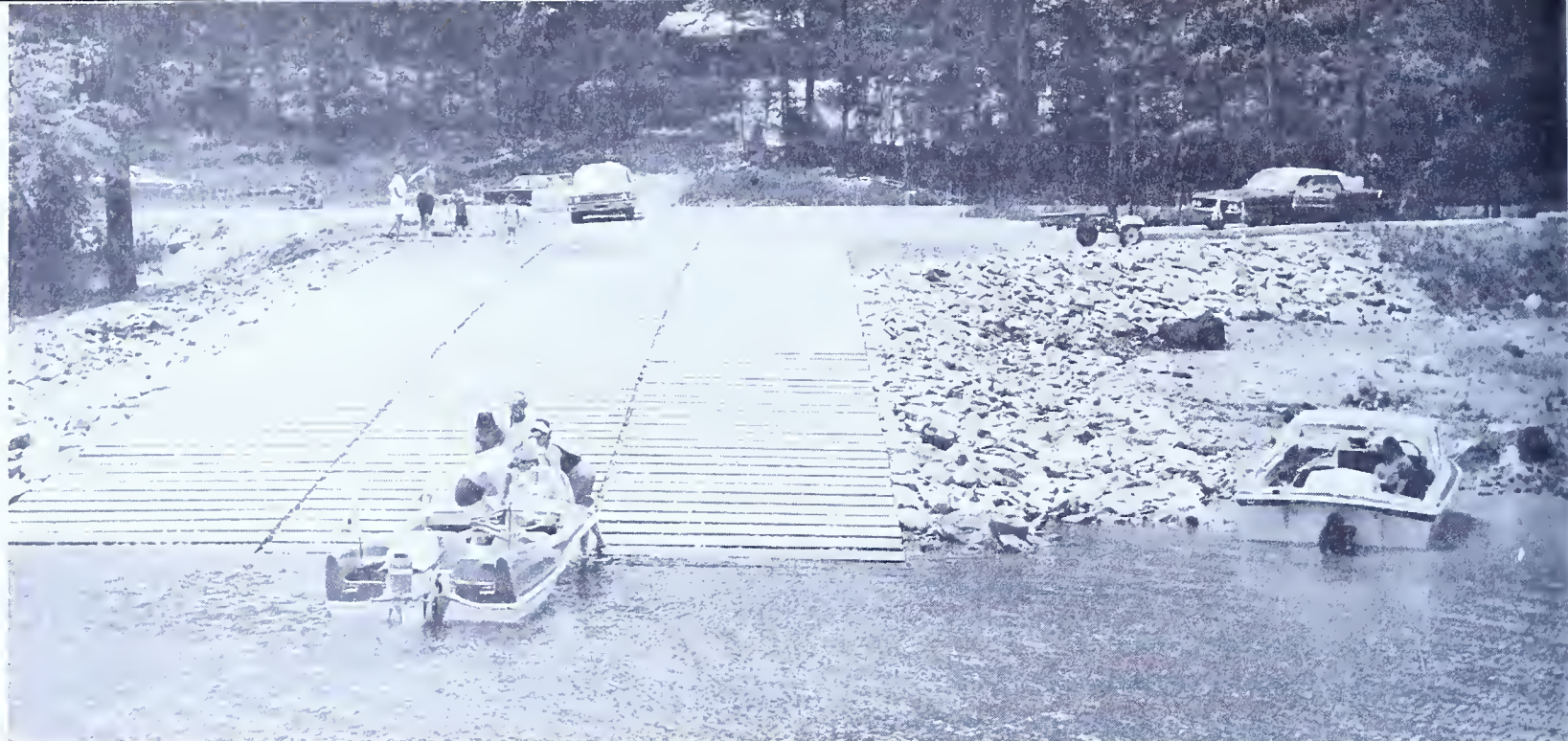
CROOKED CREEK LAKE, only one hour from Pittsburgh, is the nearest lake for power boating, especially for eastern suburb residents. This lake is the perfect spot for a day's outing with its large beautiful park for picnicking, sandy beach for swimming and a camping area. No houses are allowed along the lake because it was built and is controlled by the U.S. Army Corps of Engineers. Therefore,

a natural look is preserved. On a day when few people are there, deer frisk about in plain view.

The launch site for boats is fair. Prepare for a muddy bottom when you wade in to launch the boat. This lake is quite small and narrow, perhaps two miles at the most in the ski area. On a hot day competition is keen for ski space. If you fall in, keep your eyes open so another boat doesn't run over you.

The lake is narrow enough that you feel as if you were boating on a river. Fortunately, the lake is closely policed and boaters must obey the rules. Otherwise, it would be quite dangerous to water ski on such a heavily used small skiing area. After skiing it is very pleasant to pull up at the beach for a swim. An area is provided to park your boat right on the beach.

There are no motels or restaurants



Allegheny Reservoir's facilities, above and below, are adequate for many boaters. U.S. Forest Service photos.

in the immediate vicinity so the best bet would be Ford City or Apollo.

MAHONING RESERVOIR is only twenty miles or so north of Crooked Creek Lake. This lake is similar to Crooked Creek but has a more rugged, wooded appearance. Primitive camping is encouraged here. This lake is not as heavily used as Crooked Creek. Kittanning is the town in which to look for the necessities of life such as motels and restaurants.

TIONESTA LAKE at Tionesta, Pa. is a favorite of campers, boaters and canoe enthusiasts. The Allegheny river flows past the town and small cottages line the banks. We spotted three canoe rental agencies. "Quaint"

describes this town, and Pittsburgh's bustle could be a thousand miles away. Be sure to note the town jail and buy groceries at "The Super Duper."

It is possible to get a fair meal at one of the two restaurants and perhaps a motel room, but this area is tailored to campers. Several excellent campgrounds are available in town or you can take your tent and live down by the lake. (Be sure to get a permit.) Some camping areas are accessible by boat only.

There is a limited picnic area by the dam, but if you want to swim at a guarded beach you'll have to go back to Tionesta. The launch site is ade-

quate but not fancy. This lake is long and wide with several miles of skiing area. Fishing areas are provided. The lake is on the fringes of the Allegheny Forest with completely unspoiled wooded scenic beauty.

After leaving Tionesta Lake, all boaters should visit the giant of lakes. The ALLEGHENY RESERVOIR near Warren, Pa. When this lake is first seen from one of the lookouts along Route 59, the scene is breathtaking. The lake is so huge it looks like an inland sea. You are not completely overwhelmed, though, only because you can see both shores when you are in the middle of the lake. The end of the lake is shrouded in mist since the





"Look, Ma, no skis!" . . . closest thing to walking on water since Peter tried! Water skiers (with or without) need lots of "elbow room."

lake is thirty-five miles long.

One should first visit the dam at the southern end of the lake and tour the information building. Maps of the lake and other helpful information can be found here. Next, one should be sure to get reservations at a motel in Warren. Accommodations are scarce and expensive. It is best to reserve a room ahead of your visit because it's three hours from Pittsburgh and you'll need to stay overnight.

Now, launch your boat at one of the lavish launch sites and take in the crystal clear beauty of the lake, air and wooded scenery. This lake is big enough to fish, ski, or sail in almost complete privacy. Some boaters from Pittsburgh won't recognize any other lake to do their speed boating than the Allegheny Reservoir and it is unique in its vast wilderness-like silence.

The 91 miles of shoreline have ample space for lakeside camping. Here again, no houses are built along the shores although there are a few marinas along the length of the lake. If you wish to fish in the New York

State section of the lake, you must purchase a license from the Seneca Indian Nation which owns the land around that part of the lake. Even if you're a good swimmer, wear your life jacket — it's a long pull to the opposite shore.

SHENANGO LAKE, at only a little over an hour trailering time, is enjoyed by many Pittsburgh water-skiers. The lake has a good launch site and a heavily used picnic area. Campers pitch their tents beside the lake. With Sharon Pa. only a few miles away, plenty of motels and restaurants are available. This is a large lake with a friendly atmosphere as one sees many other boaters. A marina is located on the south shore. The roads couldn't be better to reach this lake from Pittsburgh, interstates all the way.

CONNEAUT LAKE offers the possibility of a summer home as houses completely surround this small lake. The water seemed clear but was in constant motion because of the tremendous number of speed boaters

on the lake. At the public launch site watch out for a sand bar at the entrance to the lake. An amusement park is on the west shore and there is a touristy air about the entire area. Motels are in abundance — as is traffic!

THE YOUGHIOGHENY RIVER RESERVOIR is located in the mountains about ten miles from Ohiopyle State Park. A small picnicking area is located by the dam. This large lake has an undeveloped, "new" look to it. There is a marina but few motels or restaurants are in the area. Some of the local farmers will store your boat if you would rather not trailer it each time.

Since the mountain vacation areas are so close, a week spent near or on this lake would not seem unreasonable. The lake is not an overused one so perhaps it will be a "find" for some. PITTSBURGH'S RIVERS:

After buying a boat we decided to try the local rivers as they were close, requiring little travel time. We soon found that many Pittsburghers dock their boats on the river at some of the local marinas that almost line the river banks, particularly on the Allegheny river. The farther up the Allegheny one travels, the cleaner the water. When waterskiing, however, it is wise to keep your mouth shut when you fall in. I didn't and got a distinct chemical taste. The current is a problem mainly for inexperienced water-skiers, it tends to float the downed skier under the boat if the skier is up-river of it.

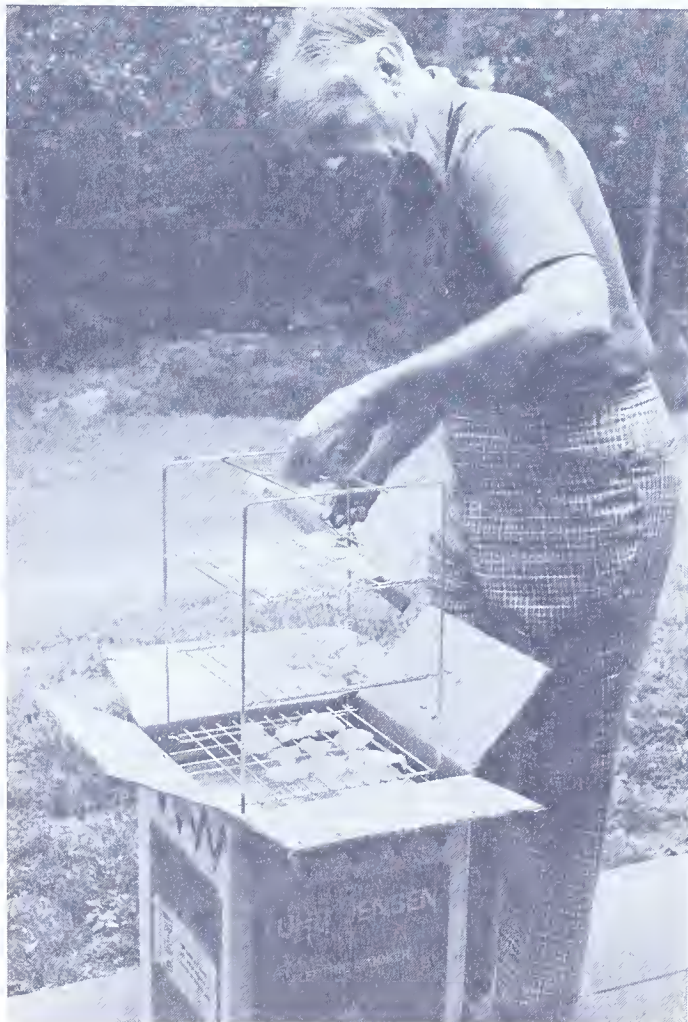
All boat owners should take the course given by the C.G. Auxiliary in the winter. The fee is only about nine dollars and the class is given in easily accessible places such as a recent one given at the Monroeville Mall. If a boat owner is using the river, this course is invaluable as it teaches how to use the locks on the river.

All lakes and rivers are closely policed to prevent accidents and one can prevent fines and perhaps save lives by taking the C.G. Auxiliary course. Last summer on our trips to various lakes we were checked twice by local authorities to see if we had the proper equipment on the boat.

For more detailed information and free maps write or call the U.S. Army Engineer Corps District, Federal Building, 1000 Liberty Avenue, Pittsburgh, Pa. 15222.



Arranging the air-dried fish on the racks, above left, author takes care not to crowd the individual pieces. Then, fill the flavor pan well with wood chips, above, for a good hour's smoking flavor (follow manufacturer's recommendations regarding the amount of chips used) Ready for the smoking, a little help from a spouse, below left, is always welcome when replacing the rack in the smoker carton. Place filled pan over heating unit, below, and wait. . .



*An ancient method of preservation
can introduce the angler to new ways
to enjoy his catch with a different twist —*

Smoking Your Fish is Easy!

Story & Photos
by Jean I. McMillan

While the idea of smoked fish may be new to you, the preservation of many foods by smoking is centuries old. North American Indians of several tribes learned to dry foods, including fish, in the sun and over a fire. The use of fire, and naturally smoke, resulted in different flavors, adding variety to a necessarily plain diet.

In modern times, even though we have freezers to keep our perishable foods over long periods, many modern cooks have learned to appreciate smoked fish and meats.

Practically any species of fish can be enhanced by the smoking process and a wide variety of herbs and flavorings will add spice and flavor to your choices. In freshwater fish you may use bass, bluegills, carp, crappies, catfish, muskies, perch, pike, shad and all kinds of trout, smoked for your table.

Perhaps the most important step in the preparation of fish to be smoked is careful cleaning and rapid cooling soon after netting. Quick cleaning and proper cooling are vital to a good smoked product. If you can't get around to the smoking process soon, be sure to freeze the fish. You may know that frozen fish keep better when frozen in water. It is possible to freeze these in a weak saline solution of one tablespoon to one quart of water. The advantage of the salt use is helpful in starting the salt cure which is otherwise gotten only in your soaking brine.

The brine and soaking period is the first process toward smoking your catch. Use only noniodized salt and mix a simple solution: $\frac{1}{2}$ cup salt, $\frac{1}{2}$ cup sugar and one quart of clear water, preferably not noticeably chlorinated.

To this simple brine you may add any of the common herbs which appeal to you — rosemary, thyme, basil, dill, marjoram, parsley or tarragon — $\frac{1}{4}$ teaspoon of one or two. Certain spices, too, will benefit the brine. Celery seed or caraway are mild; ginger, nutmeg and curry are much stronger. Individual tastes call for experimentation. Try just $\frac{1}{4}$ teaspoon for one or two special flavors, choosing those which complement one another and are often used together in other recipes.

You may also enjoy trying honey or molasses for your sweetening agent. And, some lemon juice can only enhance any fish dish. If you are a wine aficionado, you certainly would appreciate $\frac{1}{2}$ to one cup added to that brine. Please note that these are "either/or" suggestions — *not all in one brine!*

After cutting your fish in chunks — or leaving small varieties whole, immerse the fish in the brine of your choice. Cover and place in your refrigerator — four hours with small pieces and eight hours for larger chunks or whole fish. The larger the pieces, the longer the soaking time is the rule of thumb.

One word of warning: use only glass, pottery or stainless steel bowls. *Never* use aluminum or wooden containers for the brine, which may be reused within one week if kept in the refrigerator.

When the soaking period is over, rinse all pieces in clear water and pat dry on towelling.

The second step is to allow the fish to air dry for one hour. This can be at

room temperature, unless you are experiencing a heat wave! You will notice a glossy surface appearing on your drying fish — this is part of the process and desirable.

Now you're ready to arrange the fish on racks and start the smoking. Spraying all racks with a nonstick coating will help in cleanup later and now's the time to think of that.

While you are loading those racks, plug in the smoker for a ten-minute preheating time.

Now put racks on the wire frame and replace in the carton. The enclosed cardboard carton helps hold the smoke to give you more flavor.

Fill your flavor pan with hickory chips and put in place over the heating element. While hickory is the wood most commonly used, applewood, cherry or alder may also be enjoyed. Some mixing of flavors is a good change at times. Now let your smoker do the work, for 45 minutes to one hour, when you'll refill the chip pan. Two to three panfuls will probably be all that will be needed.

Although you may be through with the smoke flavoring process in two hours, many times you will want to continue the drying for some time longer. This means that after two pans of chips, you will allow the fish to continue drying and curing with the heat and air in the smoker. The longer period will be used when you smoke whole fish, of course.

One other soaking brine suggestion which will add variety to your smoked dishes is that of using different juices in the soaking cycle. Apple or orange juice, even pineapple juice can vary your results and create a gourmet image for you among friends! Whether you go all out for variety, or stick to a basic but tasty methods, you're sure to find smoking fish a great new wrinkle in appreciating the catch of the day!



A BIG TROUT IN A FAMOUS STREAM

Story & Photos by Bill Allen

Many years passed before I could fish the Pennsylvania limestone country. When this finally came to pass, it was only natural to head for the best: Letort Springs Creek. My limited experience was somewhat counterbalanced by an enthusiasm whetted keen because of the many stories, fact and fiction, good and bad, about large, wild and extremely selective brown trout. Trout that intimidated even the most experienced fly fishermen. Enormous trout, whose jaws bore the scars of many battles, each of which had left them just a bit wiser. Cautious trout with hypersensitive senses: vision keen as an eagle's and hearing that could detect the slightest sonic blunder on the part of a careless fisherman.

In my mind's eye these characteristics were embodied in the form of a Letort trout. He was of great length and girth, dark-looking and almost invisible in some deep, tree-shaded pool or in a long swift sluice protected by a grass-laden overhanging bank. The hook of his lower jaw was pronounced and his mouth showed snowy white, like a cottonmouth moccasin, when he

opened it to take in some streamborn morsel. A noble trout . . . when and if he was ever hooked he would do himself great honor in battle. And to bring him to net would be a similar honor.

The Letort, it meshed perfectly with my mental picture of the magnificent brown, even on this unseasonably hot and humid July weekday shortly before noon. But the water was cool and exceedingly clear, beckoning strongly as it moved slowly through what was generally a single channel made narrow and formidable by thick fields of cress on both sides. An aerial reconnaissance, taken from a high sturdy limb of a friendly tree, called forth a number of questions: How could I sneak up on a fish if I have to go through all that? Most creeks at least offer a little concealment, but this? What to do? Push through the cress, moving only a few inches at a time? That's what I'll have to do because the casts are long, and these flies have to be delivered with finesse. But my eye caught a notice tacked prominently to a nearby tree that warned me sternly to be careful

of the water, crossing only at designated points. There's my answer, I told myself. I'm simply not allowed to wade through the cress. I'll just have to make do with long casts to any likely candidate and hope for the best.

In spite of these troublesome obstacles the stream and yet unseen fish called louder and I at once set to fishing the hallowed water. Each turn presented new tests of my seemingly woefully inadequate abilities: double channels, deeply undercut banks, wary fish feeding in clear sight of practically the whole world, the need for guerrilla-like stalks along moss-encrusted logs laying both in and over the watercress; and, naturally, the pleasant problem of having too many flies to choose from. The good advice of lettered experts past and present tempered my actions and my firsthand limestone education grew solidly with each passing hour; but, to no avail. I failed to pique the interest of any trout, rainbow or brown, big or small. And the dream of the leviathan continued to remain just that, a dream.

Midafternoon came and went as a

tunnel of overhanging trees materialized farther upstream, promising respite from the hot sun for both man and fish. As I fished on I pondered my lack of success, wishing to perhaps meet a Letort regular who would provide sound guidance leading to instant results. Surprisingly, there was no help from that quarter because there wasn't a soul save myself on the stream — nor would there be. I'll just have to keep on trying, I thought. It's the only way.

Just as I edged slowly into the penumbra laid down by the dense trees I saw the trout, resting calmly in midstream. Feeling immediately clumsy, I wondered why he hadn't heard me as I approached. Although quartering from the rear, my advance had been somewhat noisier than necessary in such a delicate situation. And there wasn't even the merest whisper of a breeze to ripple the surface of the dark, shadowy water in case the fish turned slightly from the attention he was giving to things upstream. But there he was! My Letort trout. He's as big as any of the brood trout I saw up close yesterday at the Huntsdale hatchery and they all seemed like monsters.

"Bill, you've got to be careful," I warned inaudibly, and I was. Slowly, ever so carefully, I inched my way upstream, not disturbing the cress too much, to a spot where I could float a fly on the right track. It took half an hour to get there and afterwards I

suffered from the strain of the crouch and the worry of a misstep. The white-mouthed trout began to feed regularly on the surface, apparently oblivious to my presence and unaware of my unkindly intentions; sure of himself in the dusky water.

And now my adrenaline began its work. I wondered how he could help from hearing the pounding in my ears or feeling the sympathetic movement of the dark water in response to the quiver of my knees. He rose to feed every two minutes or so as I made ready — carefully and very slowly. One minute and forty-five seconds passed. The cast of the Letort Hopper appeared to be perfect and it was. Easing upward to the surface, the mottled dark trout examined my offering without haste. It was obviously a fraud and he returned to the depths of his lair. I waited, my legs trembling violently, and tried again. This time he didn't even bother to rise. Had I failed? No. He's not spooked, just sure of his judgement. Try again . . . a different fly. With hands trembling like they were it took a long time to tie the Black Ant on to the fine tippet. But that was probably good, as it rested the silent water a little longer. Then another rise, another short wait, and another cast. Perfect again. He rose and . . . he took it! Set the hook! I did as commanded, but too fast and way too hard. To my eternal consternation I had once again demonstrated that fault that had

plagued and foiled me so often.

The Letort trout, of course, returned instantly to his underwater domain, but this time he sulked out of sight with another trophy in his mouth and a new lesson in an already long academic career. I waited, hopefully, for another — but surely undeserved — chance. After a time, during which I continued to castigate myself in great detail, I floated another hope, a cinnamon ant, down through his feeding lane. But, he wasn't interested, having profited from and not yet forgotten the encounter. I couldn't blame him, not a bit.

In the coming darkness I left the stream, just as I found it, fish and all, but now in a rather somber mood. I failed. I'm not the great trout man I thought I was. But, as the minutes rolled by with the miles, my mood began to change to one of simple elation, as is characteristic, I suppose, of all fishermen with their inborn ability to rationalize practically anything. I hadn't really failed, I informed myself. After all, the only thing that cost me the fish was the poor strike. Everything else was OK: the approach, the fly, the presentation. My optimism took over completely; I knew I would be back and that I would be successful sooner or later. Work on the hook-setting problem, I warned, and simply come back and try again. Two weeks later I did just that.

It took half an hour to get there and afterwards I suffered from the strain of the crouch and the worry of a misstep."





The YCC & PFC . . . at Reynoldsdale

by Richard Pugh, Hatchery Foreman

During the summer of 1977 the Pennsylvania Fish Commission, and in particular the Reynoldsdale Fish Cultural Station in Bedford County, was privileged to host various work groups from the Youth Conservation Corps camp at Blue Knob State Park. The Y.C.C. workers, ranging in age from 15 to 18, were selected at random by computer from applications received from youngsters all over Pennsylvania. The only deviation from the random selection was that half of those selected were girls and the other half boys. The young Y.C.C. workers were recruited for an 8-week period to do 40 hours of environmental and conservation type of work a week. The only respite from their daily laboring activities were the 8 hours a week each spent in educational activities.

The time spent by the Y.C.C. workers at the Reynoldsdale Hatchery was education although at the same time it required a great amount of physical work. One of the first tasks undertaken by the Y.C.C. workers was in helping hatchery personnel clean up debris from the July 20th flood. The flood that wreaked such havoc on Johnstown and other parts of Cambria County also did severe damage to northern Bedford County and the Reynoldsdale

Hatchery. The majority of the workers helped in cleaning up, while others aided hatchery personnel in recapturing escaped fish from low water-filled areas of the hatchery. With Y.C.C. help, Commission employees were able to recover a great many of the sportsmen's trout, that would have been left high and dry.

The next project undertaken by the Y.C.C. at Reynoldsdale involved designing and constructing a lifelike museum display of some of the common snakes of Pennsylvania. When the new visitor's center was designed and constructed at Reynoldsdale a large glassed enclosure was incorporated into the design for just such a purpose. While all concerned persons agreed that displaying live snakes would be ideal, it was decided that the poisonous species could not be displayed safely as there would always be the possibility of someone being bitten. The method chosen for displaying the various snakes was one that is used by many of the large natural history museums. Plaster molds of the actual snakes were obtained through the courtesy of the Carnegie Museum in Pittsburgh and from these molds lifelike latex snakes were created that duplicated the actual snake to the most minute detail. After the long tedious process of

construction was over the Y.C.C. workers began the difficult job of hand painting each snake to resemble its live counterpart. This job was done with exacting care and the end result was a beautiful duplication of the original snake.

During the entire snake-making operation a number of workers were busy constructing the natural setting and painting the mural that would serve as a backdrop to the entire display. This project was supervised by Sue Gayman, a Y.C.C. staff member (and art teacher). Helpful advice and support was given by the Fish Commission staff artist, Tom Duran. As far as the overall project was concerned it was Sue's talent and the combined efforts of all the Y.C.C. personnel that gave the setting the realism and beauty that it portrays.

Hatchery Superintendent R. Ralph Berkey and I want to thank those young Pennsylvania workers and the Youth Conservation Corps program for their time and efforts here at Reynoldsdale during the past summer. At the same time I would like to extend an invitation from all of the employees here at Reynoldsdale to the anglers of Pennsylvania to pay us a visit, see the trout and view the handiwork of the Youth Conservation Corps.



The "Flood of 77" which devastated Johnstown also wreaked havoc at the Fish Commission's Reynoldsdale Fish Cultural Station in Bedford County. Photo on the preceding page shows the installation to be one big "raceway." Photo above — "business as usual," afterward. Approximately 60,000 fish lost their homes and many fish which would have been lost were recovered by hatchery personnel who were ably assisted by YCC workers. After the cleanup, the "physical" experience, the YCC crew was briefed on hatchery techniques by Superintendent Ralph Berkey, below left. Then, cooperating with PFC personnel and Sue Gayman, YCC Artist/Counselor, and YCC worker Maureen Kennedy, below right, put the final touches on an interesting new snake display installed at the new Visitor's Center at the Reynoldsdale installation.



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Deputies Gary McHenry, Jim Neely, Pat McCabe and Bill Kempf, above, show technique which may be used safely by canoeists when assisting victims of a capsizing in reboarding their righted craft.

OFF-SEASON — IN-WATER TRAINING

photos by Russell Gettig, Staff Photographer

Waterways Patrolmen and their Deputies from across the state participated in water survival sessions last winter. Presented by Alan MacKay and Alan Kegerise, Boating Information and Education Specialists from the Fish Commission's Bureau of Waterways' Harrisburg Office,

the programs were scheduled at six different state colleges — one in each law enforcement region. The training was designed to sharpen elementary rescue skills and broaden the enforcement officers' knowledge in river safety and cold water survival techniques.

Deputy Pat McCabe, below, shows accepted method of reboarding canoe unassisted. Canoes and johnboats are responsible for 80% of all boating fatalities and great emphasis was put on their use.

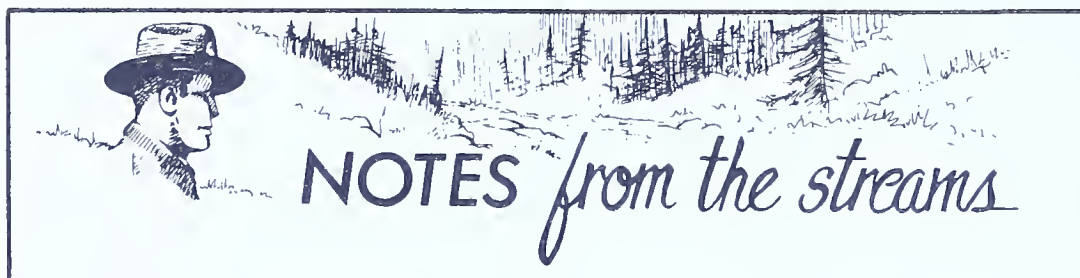




Getting back into a johnboat after a spill — there's a right way and a wrong way. Deputies Nelson Brackbill and Rick Miller, above, demonstrate approved reboarding — from the stern.

"All work and no play?" Not really. Although the sessions were not without a note of hilarity, this scene does prove the validity of staying with a capsized boat and its built-in flotation.





UNUSUAL "SWITCH" —

A good outfit for successful brook trout fishing in small mountain streams is a 10 or 12 foot cane or bamboo pole with 6' to 9' of 6X or 7X leader material. In most cases you can carefully sneak to within easy reach with this outfit and not need to cast — an advantage to be sure. This outfit has a further advantage in that it's unbeatable for instructing a youngster in the fine art of fishing one of these streams. If you have never tried this method, you may find a whole new dimension in trout fishing.

Ronald L. Hoffman
Waterways Patrolman
S/York County

PRETTY SHARP...

While patrolling Stevenson Reservoir during the Sinnemahoning Sportsmen's Association Winter Fishing Contest, I asked one fisherman for his camping permit as he was setting up an aluminum camping cot. "I'm not camping," he replied and, as I watched, he constructed a very nice wind shelter by bolting uprights to the cot's legs and placing a canvas over them. I felt a little foolish when he finished. These ice fishermen are pretty sharp individuals.

Stan Hastings
Waterways Patrolman
Cameron County

ADDED BONUS!

Nessmuk Lake, a Fish Commission Lake located right on the boro line of Wellsboro as you travel south on Route 287, furnishes some pretty good panfishing, and this spring produced what will make some pretty good hunting this fall. A mallard hen successfully hatched and reared nine ducklings on the lake this year. In the past, other ducks have nested but due to people walking the shoreline and chasing them from the nest, dogs in the area, and probably some wild predators, I have not seen a hatch of ducks take place. I had a lot of local residents comment that they really got a lot of enjoyment from watching the mother and her

brood as they paddled around the lake and they miss them since the ducks are seldom seen since they were able to fly.

Raymond Hoover
Waterways Patrolman
Tioga County

STREAMSIDE BANTER —

After receiving several complaints about fishermen catching their limits and littering on opening day of trout season at one of the favorite fishing holes on Farnsworth Branch, I took the fish pole and joined the big crowd about an hour before opening time. After some of the yack I overheard, those people just had to be kidding. It went something like this:

"Just look at those lazy stuffed fish. I bet the bakeries get rich every year about this time selling the Fish Commission all that old stale bread to stuff them trout with."

"Sure, the kids catch most of the trout ... you know why? Fish are like all other animals, they aren't afraid of kids!"

"How many are you going to keep today?"

"Only 8, why?"

"Gosh there are so many deputies around you just can't afford to take the chance anymore. I bet there is one in this big crowd and we will all know who he is soon as some nut pitches away a beer can or pulls out 9 trout."

"I think the bears get most of the big ones. They got cubs now ya know."

One fisherman turned to me and said, "Happy bunch, isn't it?" I said, "I'm not sure happy is the right word!"

Owen F. Quarles
Deputy Waterways Patrolman
W/Warren County

DEAD GIVEAWAY!

As I watched two young boys fishing in the Juniata River near Lewistown this July, one of them hooked and landed a smallmouth bass. I could see that the fish was legal in size, but just by an inch or so. They immediately cleaned the fish, and in doing so they looked up to see me on the river bank. They laid the fish on the measuring area of a canvas creel they

were using and asked with long faces "How long must a black bass be?" answered, "Nine inches." Their faces suddenly lit up with smiles, and I knew my original guess was correct as to the length of the fish.

Larry R. Baker
Waterways Patrolman
Mifflin/Juniata Counties

JUST A LITTLE TOO LATE

Deputy Chuck Smith received telephone complaint about a pollution from a disturbed woman. She stated that lot of muddy water had flowed down the stream near her home from a nearby surface mine operation. Deputy Smith began to question the woman to obtain facts and directions.

Question No. 1. "What is the name of the stream?"

Answer: "Hays Run."

Question No. 2. "When, and at what time did you observe the muddy water flowing down the stream?"

Answer: "Oh ... a couple of years ago!"

At this point I can almost see the look on Deputy Chuck's face! In fact, he later told me he didn't quite know what to say next. The woman continued to tell Deputy Smith that she tried to contact the surface mine operator for a long time but couldn't get an answer on the telephone. I wonder if Deputy Smith can find directions in his deputy manual on conducting an investigation two years late.

Jim Smith
Waterways Patrolman
Armstrong County

BUG PATROL

Last winter, while shopping in the town of Clearfield, a gentleman stopped and asked me where he could get some minnows. I told him that at that time of the year it would be very difficult, but when the ice went out I knew a spot in the river where he could get some. As the conversation went on he then told me that he did not fish. It seems that a small stream runs through his property and he wanted the minnows for mosquito control.

Edward W. Brown
Waterways Patrolman
Clearfield County

SUBSTITUTE?

On a recent preseason stocking of Duman's Dam, a large group of men had gathered to watch the stocking, and the subject came up regarding the penalty for

ishing in the closed season. After hearing that the penalty was, one individual asked me if we accept "food stamps," instead of money!

Robert L. Kish
Waterways Patrolman
Cambria County

OLD SALT

Recently I had the opportunity to see a few trophy fish for Pennsylvania waters. This may not seem too unusual or exciting every year there are many large fish caught. What makes this so unusual is that it was a 30-inch *STRIPED BASS*. This fish, caught by Steve Gelesky of Sharon, Pennsylvania in the Shenango River, is normally thought to be a salt-water species. These fish were stocked experimentally by the Fish Commission several years ago in the Shenango Lake. If this fish is any indication of the size they will grow to in our waters there may be a new exciting fishery at hand.

Larry V. Boor
Waterways Patrolman
Mercer County

BITTER UNLIMITED

On March 4 and 5, 1978, the Williamsport Chapter of Trout Unlimited held their second Trout Kickoff at the Penn Street Armory in Williamsport. It proved to be a great success with approximately 500 people attending. There were a great many displays and demonstrations and Trout Unlimited gave away about 3000 literbags.

As the people passed the Fish Commission display, I couldn't help but think what a clean place the county would be and how many happy landowners we would have if those bags were used . . . just once!

I wish to tip my hat to Trout Unlimited which is a great organization.

James H. Lauer
Waterways Patrolman
Lycoming County

AMAZING!

During the preseason stocking of trout in the streams in this district, it was utterly amazing the number of sportsmen that turned out in 20 degree and snowing weather to assist in stocking trout. There were amid this group men, women and children of all ages wading through snow up to four feet deep, through mounds of ice piled up along the streams. Float stocking served several places which were very remote (one poor guy was very let out

as he had an accident on the way to stock fish and his float boxes were demolished in the accident!). After the winter that left mounds of snow and ice, it was surely heartening to see just the caliber of sportsmen that want to share in helping to see that the streams are stocked with trout.

Allen G. Stiffler
Waterways Patrolman
Indiana County

RECOGNITION —

Recently the Luzerne County Federation of Sportsmen Clubs awarded their most coveted award to a group of high school youth enrolled in the school's environmental education class. The recipient, Bishop Hoban High School's Environmental Education Class had no affiliation with the Federation other than a oneness of purpose — conservation. Awards of this nature are generally bestowed upon individuals within the organization that serve above and beyond the call of "duty." I think it is a real show of "sportsmanship" on the part of the Federation to recognize these young people for their hard work and sincere interest.

Robert Lynn Steiner
Waterways Patrolman
S/Luzerne County

WOULDN'T WORK!

Deputy Game Protector Donald Ruth and I were patrolling a stream that has just been stocked that afternoon. Officer Ruth apprehended a violator who had over-the-limit of trout. As he took the information and seized the fish he heard the usual plea of, "Let me put some back." What was so unusual in this instance was that the defendant's fish had the entrails and heads removed!

Kerry L. Messerle
Waterways Patrolman
N/Lancaster County

SNA-KEY!

While patrolling Ridley Creek we stopped to talk to one of the residents living along the creek in Ridley State Park.

We were telling him about the large watersnakes we encountered along the stream and in the rock dam at the fly stretch. He said very often he had snakes in his utility room, kitchen and around his house. He then told us that he kept a spare house key under a flat rock — just in case he lost or forgot his. He got to thinking about the snakes and checked under the flat rock to see if one lived

there. Yes, there to his surprise was a small snake abiding there.

He said that some night if he had come home after having some liquid refreshment and had forgotten his key he would have certainly believed the DT's had arrived if he had tried to open his front door with a snake. This probably would make anyone get on the water wagon in a hurry.

Willis A. Holgren
Special Waterways Patrolman
Delaware County

"DUMMY RUN!"

During patrol of trout waters prior to opening day, Deputy Chuck Allih observed two men in Brady Run Creek who appeared to be fishing. At least one of the men had a long rod-like object in his hand. After making a cautious approach to prevent detection, you can imagine the expression on Chuck's face when he learned the man was holding a remote control radio transmitter with a telescopic antenna. Running around in the creek to the men's amusement was a small boat. "The only difference between men and boys is in the price of their toys!"

Don Parrish
Waterways Patrolman
Beaver County

GREAT BLUE HERONS

While on check of stream and road conditions in the Hallton area along the Clarion River, I observed 8 Great Blue Herons standing in a row observing the edge of the river, probably looking for something to eat. They must have just come north and found the "pickings pretty slim" after the worst winter on record.

Bernie Ambrose
Waterways Patrolman
Elk County

UNDERCOVER GHOST

Due to his size, Waterways Patrolman Mechling, a respectful 6'-6", 260 lbs., has often been referred to as the *Jolly Green Giant* when in uniform. But recently, while assisting me on patrol of a stream in my district, he wore white coveralls and a white stocking cap and is now referred to as "Casper," the *Giant Unfriendly Ghost* to some people who insisted on fishing in approved trout waters during the closed season.

Gerald T. Crayton
Waterways Patrolman
N/Allegheny County

Ashore & Afloat

by Gene Winters

Wood is subject to dry rot. Aluminum pops rivets and corrodes. Fiberglass chinks and wears thin from weathering. Pick a boatbuilding material and someone will find something wrong with it. The truth is each material has its advantages and drawbacks. Many times the final decision of a material of choice cannot be made until you know what you want out of it and what you're willing to put into it — in time and money.

There are a lot of misconceptions about boatbuilding materials and their worth. There are some otherwise knowledgeable boatmen who insist there *is* such a thing as fiberglass rot. Others stay away from wood, handsome as it is, convinced that, at some point in time and with little warning, a wood boat will suddenly disintegrate. Not that it makes too much difference if you've got wood rot, but it's highly unlikely that you'll ever see *dry* rot in this country. Climate conditions are not right for it. What we get is really *wet* rot. But even this condition, properly handled and treated, need not spell economic disaster or pose a threat to safety. Aluminum? True, in years past, rivets did pop regularly. Corrosion, too, was a problem. But new manufacturing techniques and methods using modern marine aluminum alloys have pretty well reduced or eliminated these problems. Fiberglass? While there are some cases of rot on fiberglass boats, investigation shows it turns up in *wood* used on these boats that is not properly treated or encased. Let's take an even closer look at the three major boatbuilding materials.

Wood, especially in larger size boats, has a certain amount of snob appeal or can be a status symbol. There are few who will dispute that there's something about a wood boat

that is uniquely salty. No matter how much wood trim a fiberglass builder puts on his boat, it's still not the same thing. It really isn't too surprising that wood is still a very popular material and over 150 manufacturers still build models entirely of wood. You can't fault those who argue, however, that a wood boat requires much attention and a good deal of work. But the secret is to keep after it on a regular basis and not wait until everything needs doing at once. So handled, wood boat maintenance can be a labor of love.

Much of what you hear about wood rot, especially in recent years, is, I suspect, generated from salespeople who deal only in fiberglass or aluminum craft. Chances are they only know what they've *heard or read*, not from firsthand experience. Last summer, while visiting a daughter in a New England state, I talked to many men of the sea. Over and over among these sailors I found an almost overwhelming preference for wood, especially from those who made their living on the water. I've heard tell that in one of the New England states, especially in the remote lake areas, you can't even find a fiberglass or aluminum boat. Add to this the fact that there have been great advances in paints, varnishes and preservatives in

recent years. The new polyurethane varnish, for example, is so tough you practically need dynamite to remove it. Silicone alkyds, epoxy and other new formulations almost guarantee success.

Durability? I took a ride last summer on a 1932 cruiser that was the pride of the seas. In many large boating areas, there are scores of wood boats 20, 30, even 40 years old, still plying the seas in safety. Isn't it mysterious that rot, wet or dry, did not take them to the bottom years ago?

Aluminum, though popular, is still suffering from a misconception that started many years ago. It's certainly true that pure aluminum is out of place in any boating application. But, remember, the metal used in today's boats is *marine* aluminum. Like many modern metals, marine aluminum alloys are made with special designations and for specific purposes. If a riveted boat has been stretch-formed (made with compound curves by stretching the metal beyond the yield strength and then rehardening it), chances are you'll never hear rivets popping. Corrosion is pretty well in hand, too. What really gave the aluminum boat business a setback from which it never fully recovered came about after World War II. Some enterprising folks — out for a quick

There is little question of fiberglass's popularity among boaters. All except one hull visible in this photo are made of fiberglass.



luck — got hold of surplus aircraft aluminum containing copper. The copper and aluminum pitted due to galvanic corrosion, especially in salt water.

Contrary to popular belief, most of the stories you hear about scorching heat absorption by aluminum boats just isn't so. Brightly polished aluminum may look hot and reflected unpleasantly, but it actually remains cool to the touch. Another complaint about aluminum boats is that they are noisy. They can be, but so can a wood or fiberglass boat when you drop a 30-pound tackle box from a standing position or kick an oar around the boat. Aluminum boats today have foam flotation applied under floorboards, behind ceilings, under decking and almost any other place room permits.

There is little question fiberglass boatbuilding is the rage today. How much longer this may hold true with the increased cost of fiberglass (a petroleum derivative) is open to question. But there are about three times as many fiberglass boatbuilders as there are wood and aluminum combined. There are those who say much of the popularity stems from manufacturers' enthusiasm for the material as it lends itself as well as any material to mass production techniques and greatly increases the chance of having a satisfied customer because of low maintenance required. In any case, fiberglass is the dominant material for inboards and outboards in the 16- to 26-foot class. That statement will likely soon be true (if it isn't already) for under 16 and over 26-foot to 65-foot vessels.

The beginning of fiberglass boats some 35 years ago was a little rocky. Those firms with wood boatbuilding experience jumped in with both feet. But so did many one or two-men backyard or garage operations. Reputable builders spent many months and countless dollars on designing, molds, building, testing, distributing and selling. The backyard boys went out to a marine store, bought a boat off the showroom floor, took it home and made a mold from it. A steal, in more ways than one. However, these boats were often of inferior materials and construction. They sold, but the result was many unhappy customers in a relatively short period of time. Fiberglass, like



Both boats in this photo are fiberglass. Prospective buyers consider a number of factors and low maintenance is an important consideration.

aluminum, was sporting a black eye.

Lady Luck smiled on fiberglass, however. The recession of the 1960's cleared out most of the dollar-grabbing backyarders. What that period didn't take care of, the Arab oil embargo did. (Along with a few well-intentioned companies, too.) Good fiberglass boatbuilding is an art and reputable manufacturers have turned it into a science, also. But fiberglass does get caught up in the hourglass of time. Like any material, it requires its share of attention and care. Gelcoat, the finished cosmetic outer layer surface (and the only portion containing color pigments) does fade with time, especially with irregular cleaning, and polishing and waxing. True, it can be rubbed down, buffed and repolished. But, there's a limit to the amount of gelcoat you can remove with an abrasive before there is simply no more left.

Many fiberglass boats *do* have wood in them, even if you can't see it. Shortly after we bought our 21-foot fiberglass daycruiser, we noticed a one-quarter inch crack had opened up in the transom when we hit the throttle. Inside two outer layers of fiberglass was a wood transom. Water had been getting inside through edges and corners, and eventually the wood rot-

ted. Either the previous owner didn't recognize it or knew he'd found a sucker. Many boats made of fiberglass have wood struts, stringers, and beams. Sometimes they are encased in a fiberglass protective shield; other times they are open to whatever water finds its way to their neighborhood.

If you owned a pre-1962 fiberglass boat, you should, however, at least take a second look at those made in the last ten to fifteen years. You may be pleasantly surprised.

I've owned two fiberglass boats and one wood . . . and in that order. Which did I like best? Would I go back to fiberglass again? I'm not sure I can answer. Besides, this is the wrong year to ask me. With the help of the family, we just completely stripped down and repainted every inch of our 26-footer this year. The old salts tell me, however, that I would never be happy with fiberglass after owning a wood boat. They claim you can move from fiberglass to wood but never back to fiberglass again and be completely satisfied. They may be right. After all, they ask, could you picture Christopher Columbus ever trading one of his ocean-going wood vessels in for, of all things, a fiberglass boat made in a mold that looks like an oversized bathtub?

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

FISH FACT: Spawning muskies do not build nests. They scatter eggs and milt in debris-cluttered water, then ignore them. Without parental protection, many of the eggs and later the newly hatched fry are lost but a female drops many thousands of eggs, so enough survive to maintain the population.

Look for fly hatches in the shallow and fast moving water in a stream. Natural insects appear most often in this type of water than on or over deep pools.

Trout and other gamefish do most of their feeding in summer in the early morning, before sunrise, and in the late afternoon and evening, after the sun's rays are off the water. Most of the rest of the time they spend in shelter of some kind.

A fish that takes a deep-running plug or other lure may have beaten another fish to the strike. That is why you often see bass swimming close to a hooked fish. Cast back into the spot where the strike occurred; or, have a buddy cast close to the hooked fish and another strike may result.



A trout that takes a dry fly floating on the surface usually turns and heads down deeper into the water. So, a gentle lift of the rod is really all that is needed to set the hook home. A hard strike can break a fine leader point or rip the hook out of the mouth of the trout.

In still fishing with minnows as bait, bring the minnow in every few minutes and make a new cast. This will keep the minnow from hiding in weeds or rocks and every cast is another opportunity for a fish to see the bait drop into the water.



A fish that has been thoroughly tired out can be beached if there is a sandy or gravel spot close at hand. Gently draw the exhausted fish through the shallow water onto the beach. Keep it moving head-first; and, if it does make a last-ditch effort to get free, it will move closer to the sand or gravel rather than back into the water.

Make your spoon come alive. Experiment with different retrieves that will swim it aimlessly and erratically. Using both rod and reel, a skilled angler can make a spoon wobble, dive, climb, spin and dart. Often even a slow crawl along the bottom, raising little puffs of sediment, gets action.

Sprinkle a carp fishing area with whole kernel corn several nights before fishing the spot. The carp will move in and begin feeding and will hang around the area for several days. Then use corn kernels, enough of them to cover the hook you are baiting, cast and let the rig lie on the bottom—you'll have fun.

Explore the water when you begin fishing for bass. First try a surface lure. If no action results, fish barely beneath the surface. If there still are no strikes, let the lure sink about half way to the bottom. If that also fails, try bumping the lure on the bottom or retrieve it just a few inches off bottom. One of the four should locate the fish and produce action.

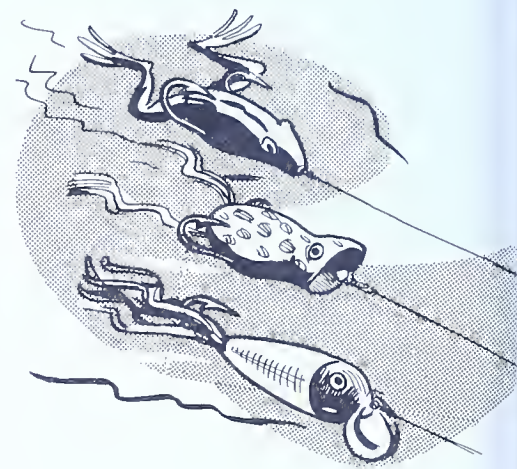
Round bobbers, even very small ones, are not the best. . . better, are thin pencil-shaped bobbers that ride very lightly on the water and that reveal the bite of a fish much better than the heavier floats.

Cruddy stuff on the surface of a lake when it is "in bloom" is a mass of plankton, minute forms of animal and plant life that provide food for minnows and some type of insects. Under the "bloom" the water may be clear and fishable with bait or lures that go three or four feet deep.

Bass anglers like surface lures but too many have the idea that the only shallows are along the shores. That is not true. There can be a shallow area in the middle of a lake or river pool, an area where a sand bar or rocky ledge is close to the surface. Fish feed in such areas as often as they do along shorelines.

While a storm is building up, fish often go on a feeding spree. But if you are fishing from a boat, get off the water at the first distant rumble of thunder or flash of lightning. You and your boat are the highest objects on the water and could attract a lightning strike.

Don't laugh at telescoping steel fishing rods. They are excellent for fishing brushy streams, since their length can be adjusted to suit conditions and their steel construction makes them strong and durable. True, they are not as much fun to use as bamboo, glass or graphite rods, but they are by no means "kids' stuff."



Weedless surface lures are in great demand for fishing cluttered waters of ponds and lakes. They are available in such lures as the imitation frog (top), the surface popper (center), and plugs that move with a swimming action (bottom). Some have weed guards, and others have hooks that ride with the points up instead of down.

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Fish Commission Allegheny River Patrol

PENNSYLVANIA

AUGUST—1978

Angler

the
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COMPARATIVELY SPEAKING . . .

Charles Dickens' introduction to "A Tale of Two Cities," in 1859, included comparisons of the day with the period of the French Revolution some 85 years past. In retrospect, each generation, no matter how far separated, can do the same.

"It was the best of times, it was the worst of times . . ." our income is the highest in our entire history; our expenses are likewise at the highest in our history.

" . . . it was the age of wisdom, it was the age of foolishness . . ." enlightened environmental legislation in the late sixties and early seventies is now being attacked by shortsighted selfishness for short gains.

" . . . it was the epoch of belief, it was the epoch of incredulity . . ." our Fisheries Management surveys are beginning to prove that inventory surveys and classification are truly the credible way to go, yet we are constantly beset with requests for self-serving stocking of fish in any body of water that moves.

" . . . it was the season of Light, it was the season of Darkness . . ." at a time when, as an independent agency, our policies and accomplishments are respected and envied by practically all other similar state agencies, there are now legislative moves in the Pennsylvania Senate to terminate that independence and tie the leadership of the Commission to the pleasure of the Governor.

" . . . it was the spring of hope, it was the winter of despair . . ." we gain more and more streams with clean, fishable, swimmable and boatable water while seeing more attempts to insult the water quality under the guise of providing more jobs.

" . . . we had everything before us, we had nothing before us . . ." formulating and implementing programs successfully requires acceptance by the public. We can seem to have that endorsement one day; then a highly vocal minority tries to abrogate it the next.

" . . . we were all going direct to Heaven, we were all going direct the other way — . . ." we feel that we are accomplishing our mission in the highest degree of ratings but a few thoughtless and seemingly unrelated diversions can cast a spell of gloom; that is itself devastating to our ability to serve the best interests of the resources.

" . . . in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only."

The operation of a small independent fish and wildlife agency today has lost its simplicity — much of that smothered by more and more paperwork and demands for surveys, impact statements and evaluations — enough to effectively remove those involved in resource management and protection from the very resources they are trying to enhance. There is one basic premise of which we must never lose sight to be effective managers (and this includes those active volunteers who support and help us): we must keep direct touch with those natural resources for which we are responsible. There is nothing like a good walk along a stream or a lakeshore, or an unkempt field or woods, at any time of year, to clear the mind and restore an awe and renewed respect for the Creation.

In times when others seem to be doing their worst we'll keep doing our best, always remembering "along the way, take time to smell the flowers."

Ralph W. Abele,
Executive Director

Pennsylvania Angler

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Our front cover's subject this month, the largemouth bass, has enjoyed great popularity among Pennsylvania anglers for many decades.

Although best fishing times for the largemouth are early morn or late evening, he's not above providing fine midday fishing.

"*The Largemouth*," by Tom Duran, Office of Information Staff Artist

This lone angler on the shore of the Allegheny River surely qualifies for the title "*Contemplative Angler*." Photo by Thad Bukowski.

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James F. Yoder, Editor

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"TOUCHY?"

After reading "Two Cents" and your response to same in the March issue, I was all primed to take pen in hand and supply my two cents. After much thought and deliberation about this touchy subject, I decided a "Thousand Words or Less" type letter would never begin to cover said subject.

I thusly decided to attempt to accomplish one basic goal. That goal being to set in writing my description of said touchy subject and thereby hoping to bring a response from you and the angling public. The description as follows:

The Fish Commission's monies are mostly derived from license fees paid by the total angling public. Aiming to please the public (defined as politics) the Commission has for many years operated per this requirement and has evolved into a "put and take" service department.

Along comes the wild trout and back to nature movement which is defined as quality fishing and not put and take. This upsets the old apple cart and the Commission is forced to make an attempt at pleasing this portion of the public without losing its numbers of license fees and operating capital. The Commission does seem to have its work cut out for them. I hope this will bring them out of a service department rut because it really is an enviable (sic) task.

I guess a summation of above or probably a more realistic definition would be that quality troutermen don't want their money spent on the put and takers and vice versa.

There is no need in avoiding a touchy issue—I have not mentioned anything herein that the trout angling public doesn't already know.

I would very much like to set down herein some of the numerous suggestions that I have—but that is not my intent at this time.

I would guess that the Fish Commission could use some suggestions at this time and it should be promoted in the "Angler." Of course the suggestions won't be of the "expert type"—they would be from the people who pay those license fees.

DICK BUFFINGTON
Brockport

Dear Mr. Buffington:

Your recent letter to the editor of the *Pennsylvania Angler* has been referred to me for reply. As I understand it, your point is that the Pennsylvania Fish Commission is merely a service department for hatchery trout enthusiasts and now we are being forced to face a "touchy issue," wild trout management. If this is the point you wish to make, you are somewhat out of touch with the philosophy and action programs of the Pennsylvania Fish Commission. The Pennsylvania Fish Commission does, in fulfilling its obligation to protect the resource and provide recreational opportunities, perform many services for anglers, boaters, and, in general, the citizens of the Commonwealth. We are hardly a service department for any one narrow interest group; rather, our activities involve a broad and diverse segment of those people who participate in water-oriented recreation—primarily boating and fishing. We do recognize that a certain segment of the angling public is primarily interested in stocked trout; we also recognize that Trout Unlimited, Pennsylvania B.A.S.S., Muskies, Inc., the Pennsylvania Boaters Association, and the Federated Sportsmen's Clubs of Pennsylvania are part of the angling and/or boating public and we attempt to maintain a good working relationship with all of them. I feel we do a pretty good job. Pennsylvania offers exceptional angling and boating opportunities; and as a by-product of efforts to provide good quality habitat for fish, the quality of the environment, and hence the quality of life, has been enhanced for everyone.

I'm not sure when the "wild trout and back to nature movement" started—perhaps because I can't remember when I wasn't interested in trout and the environment necessary to maintain them. If you equate the interest in wild trout with what is often called the "fly-fishing renaissance" then I would guess it dates back to the early 1960's. The two are related but not necessarily synonymous; being concerned about wild trout and making a commitment means more than sporting a Trout Unlimited logo on your fishing vest, having a silly looking Irish tweed hat with a Federation of Fly Fisherman's pin on it, owning a cane fly rod with an English reel and subscribing to *Fly Fisherman* and *Gray's Sporting Journal*. These things are great fun and are, to many of us, part of the mystique of trout fishing; but all they require is money, not commitment and personal involvement in a cause. The Fish Commission welcomes sportsman commitment to the preservation of and enhancement of wild trout—we do not regard it as "upsetting an apple cart."

I'm not sure I could identify a "quality trouterman," but I can certainly identify some quality people who have been sacrificing their time and money promoting proper recognition and management of wild trout:

working toward classification of our water for fish management purposes, testifying at hearings, supporting the Pennsylvania Fish Commission in resisting encroachments, flood plains, channelization, deleterious discharges and other of man's activities which endanger valuable streams and rivers, offering constructive criticism of programs and policies and, generally, always being available to meet and discuss items of mutual concern with Fish Commission staff. To be sure, we don't always agree with the wild trout enthusiasts' proposals, nor they with ours, but we have established mutual respect and good rapport. There are sensitive areas of trout management that haven't been discussed.

The point I'm trying to make is that the area you apparently think has just been discovered has long ago been well-explored by folks such as Ken Sink, Bob McCullough, Enoch (Inky) Moore and dozens of others including Ralph W. Abele who now serves as Executive Director of the Pennsylvania Fish Commission. Thanks to folks such as these we have moved beyond philosophic discussions into action programs. I'm enclosing a copy of an article written for the *Pennsylvania Angler*, "Inventory and Classification—A New Approach to Managing Trout in Pennsylvania." I hope this will demonstrate that we're on track and that the Pennsylvania Fish Commission is fully aware that we have an important resource in wild trout.

We have every intention of doing what is necessary to preserve, maintain, and enhance our wild trout fisheries. No doubt this will meet with occasional resistance and we'll be counting on the support of good many folks who are willing to get involved and stand up for what they believe in. I'm sure we'll receive support from the sportsmen who've been involved for years and from many of the younger people who are beginning to share the burden of advocacy for clean water and wild trout. I think they would be delighted to have you join them.

I don't know if I've touched upon your concerns or not, but I hope my message is clear, wild trout and the environment needed to sustain them have an important place in the programs and responsibilities of the Pennsylvania Fish Commission.

Delano R. Graff, Chief
Division of Fisheries

TAKES ALL KINDS

I thought I would write and tell you of something I observed when I went over to Whipple Dam to try a little winter fishing.

When I got there I saw two people out on the ice at the breast of the dam and it was not frozen all over but there was a man and his son out there fishing. The ice wasn't even solid. When I got up along the dam I heard the Ranger telling them to

et off but he had to go around and run them off.

Do fishermen think that trout are worth more than a person's life?

FLOYD E. SCHLEGEL
Mifflintown

SAVED!

I was shore fishing, casting a jitterbug in the hopes of catching the elusive large-mouth bass. I could faintly see the plug when I retrieved it since it wasn't completely dark yet. All at once my plug literally took flight and I couldn't believe my eyes. A giant great horned owl was taking off with my jitterbug! I pulled back on my rod, as I wasn't about to let him have my \$2.00 plug! Boy, that was one surprised owl when he splashed into the water. Lucky for him my line came down over a dead tree in the water and I couldn't reel him in. He soon took to the air again and the lure fell free. I lost the owl but saved my plug.

DOUG MOHRMANN
Narrowsburg, New York

PROBLEMS!

I have just started subscribing to your magazine which I enjoy very much. I am running into money problems with my fishing equipment. I have just started fishing this year for the summer and I would like to know the best way to catch a carp. I know I have to play him out but whenever he takes the bait and I yank and start to reel in a little, he rips my 10-pound-test line. I fish in the Swatara Creek. Thank you.

KEVIN THROWBRIDGE
Hummelstown

Carp are real tackle testers, Kevin, and not every one that is hooked is landed. We have many carp whose weights exceed the strength of brand new 10-pound-test line. If you're using old monofilament, it might have weakened; too, if you are not using recommended knots, they might be responsible for your line breaking so readily. You might solve the problem by going to a new spool of heavier line and tying knots as recommended for monofilament. Ed.

LIKED WORMY DIALOGUE

Just a note along with my every third-year check and to say I more thoroughly enjoyed the March '78 issue than many another book, especially page 10, the "conversation" between the red worm and night crawler and one cannot beat *"The Notebook"* — the old cliché about "...

old dogs and new tricks." Over the years I've learned more from the *Notebook*, and I'm only 75, to overfill my cup. Surely for goodness and mercy, keep the *Angler* coming. My Pennsylvania home is in West Branch Township on the South Branch of Pine Creek at Galeton and it's only 250 acres with one mile of trout stream (fly only) and we permit public fishing. Native brookies from our pond go into the stream.

Question: why doesn't Pennsylvania have a first cost and free from that time on for their Senior Citizens like most other states. I like my trout but would also like to fish at Edinboro for muskies instead of the Kawartha Lakes in Ontario. Though most of my time is spent in Ohio, I spend considerable time in Pennsylvania, too. Thanks for listening.

GLEN W. WORSLEY
Brook Park, Ohio

At this writing, HB 792 (which proposes a \$10.00 lifetime resident's license for those 65 and older — or an optional \$2.00 annual, as we have presently) is in the Senate Committee on Environmental Resources. By the time you read this it may or may not have been approved. Ed.

TROUT "SPOTTER"

I really had a big laugh on the first day of trout season this year. It was around 2:00 p.m. when my grandson and I were going down to the first hole above the dam (Walter Rosser would know where I mean). Well and behold, here was a boy of 12 or 13 up a tree over the hole. I said to my grandson, "Boy, the hole must be crowded," until I discovered his younger brother on the ground and he was telling him where to throw. He would say, "Throw over here," or, "Throw over there, there is a nice trout . . . throw over there." I know I have seen it all now! My grandson, Brian Walls, knew both boys.

E. M. "GENE" FASICK
Altoona

"FISH STORY"

I thought you would appreciate this incident which my husband experienced. We were fishing the Octoraro Creek, near Steelville, and my husband had just baited his hook with a piece of velveeta cheese and laid his rod down at his feet when "WHOOSH" . . . away it went, pulled by a large palomino trout. Well, needless to say, he was very upset and tried for three-quarters of an hour to retrieve it as the rod had a cork handle. Each time the fish slowed down, the handle would come to the surface. Finally, he put a Colorado

spinner with a treble hook on my rod and hooked the other rod with it. He was happy to have the rod even if he lost the fish but, to his surprise, when he reeled in the line there was the palomino — all 16 inches of it! It sure was some fish story and if I hadn't been there, I would never have believed it could happen.

Just a couple of senior citizens.

EMILY & LARRY PENNY
Darby

PANFISHER —

I especially liked your May 1978 issue with those fantastic *"Meals from the Creel"* and *"Flurry Fishing"* articles. They were great. In the future could you put an article about baitfishing for panfish in the *Angler* soon? Thank you.

RICHARD HARRIS
Johnstown

TRIBUTE —

Too often the Pennsylvania Fish Commission or its waterways patrolmen are criticized. This note to you is one of praise, not only for the good work performed by the Fish Commission, but of the privilege in knowing Bucks County Waterways Patrolman Jay Johnston. You will notice that we honored Jay and his wife at the Wally Taber show mainly because the attendance was over 700, both sportsmen and their families. Our attendance was several hundred above normal and we attribute that as their way of honoring such a fine person.

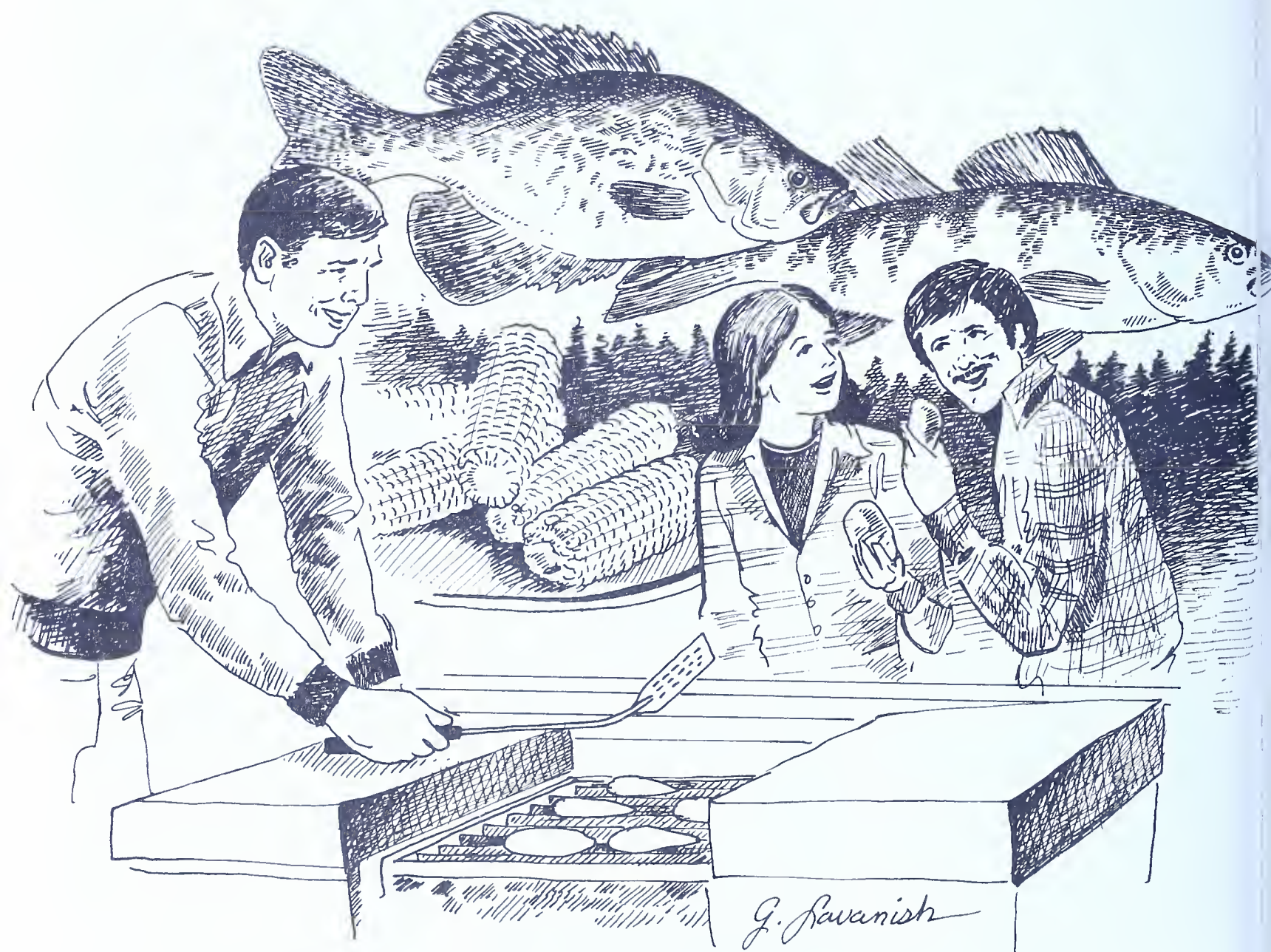
Jay had been with us over 10 years, married a local girl, was most cooperative when we needed him, took time on his days off to attend our National Hunting & Fishing Day with the Pennsylvania Fish Commission displays, attended every Bucks County Federation of Sportsmen's Clubs meetings and put up a valiant fight to preserve fishing rights on Lake Galena in Peace Valley Park. This man truly reflects the standards set for all waterways patrolmen.

MICHAEL THORRICK, President
Langhorne Rod & Gun Club, Inc.
Holland, Pa.

FAST WORKER!

I heard a lot of griping about how many fish were stocked for the first day. Well, I'm not complaining. I had my limit (8) by eleven o'clock and I'm only 13 years old. Keep up the good work.

KEITH CHRISTENSON
Greensburg



MEALS from the CREEL

by Arthur J. Michaels

THE FAMILY FISH FEAST

Imagine this: a warm August evening, charcoal briquets glowing at dusk from a dozen grills, the crunch-

ing of pretzels and potato chips, the smell of lemon juice and melted butter wafting through the trees, children cheering at a volleyball game in a clearing on your left, and on your right, relatives and close family friends patting you on the back and congratulating you.

Just what kind of celebration is this — a wedding anniversary, a job promotion, or a graduation? The scene you've just conjured up could be any of these occasions. In fact, for any kind of celebration, you could mastermind a big bash like this and with care and particular attention to detail, you could earn the reputation as a top-

notched giver of family affairs. Think of it — yes, you can run your own "fish feast!"

But this kind of spread isn't just for six or twelve people. Sure, you could celebrate any occasion with, say, twelve guests, and you could serve a worthy fish meal for them too. This kind of feast, though, is a once-a-year affair in which you pull out all the stops. *Everyone* in the family gets invited to your blowout. In the fullest sense of the words, "celebration fish feast," your guest list could number no less than fifty!

But with fifty guests on your list, panic will set in quickly unless you

take charge right away — at least a month before your target date. Then your first order of business is to plan where you're going to throw your bash.

If your own backyard isn't the right spot, and if your neighbor is ignoring you after you hinted that his backyard would be just fine, try a county or town park near your home. Go to the park first, though, and make sure the area you have in mind can accommodate fifty guests.

With a spot in mind, call the park office and ask whether or not the site is available for your tentative feast date. If it is, tell the clerk who you are, why you want to reserve the park area and the number of expected guests. In some cases the clerk might reserve the space for you. Go to the recreation permit office (if a permit is needed), fill out an application, show identification and pay the fee, if there is one. (Fees usually range to \$5.00.) Don't forget to arrange a rain date, too.

Rules, regulations and procedures for getting a recreation permit can vary a great deal. But a clarifying phone call to the recreation permit clerk of your county will always steer you in the right direction. You can investigate city and state parks with a well-placed phone call, too.

In addition to reserving park space, there are other things you need to do a month before your feast. For one thing, fifty relatives is a lot of people, so make a list of everyone who's invited, and then call them on the phone.

The menu of your fish feast, though, has to hook the hungry masses of that guest list. Question: How can you feed fifty without spending a fortune? And how can you feed hordes of people without enslaving yourself in the kitchen? Answer: Simple — your menu can feature panfish, plentiful during the "dog days" of August and September and inexpensive because you can recruit every fishing family member to catch his share of bluegills and perch. And panfish are a cinch to cook over hot coals on a grill or Hibachi. You need only a minimum number of cooking tools, and paper plates and plastic utensils will be suitable because your guests will eat the panfish with their fingers, just like eating hot dogs and hamburgers. When you buy paper

plates, though, make sure they're thick and sturdy.

To feed fifty, you'll need about fifty-five pounds of panfish. Make a check mark next to the name of all the avid anglers on your family guest list and ask them to help out by catching a mess of panfish for the feast. It's OK if they catch the fish a day or two before the feast and freeze them; but, make sure they clean the fish immediately upon catching them. Instruct your troop of anglers to gut each fish, remove the entrails, and scale them, leaving the skin on. If there are ten willing anglers in your clan, then each has to supply about five-and-a-half pounds of panfish — in other words, between fifteen and twenty scrappy little critters — child's play even for a greenhorn fisherman.

While these selected relatives are wetting their lines for the feast, make sure you have enough charcoal briquets to keep the home fires burning. If the area you've reserved has grills, make sure each is useable. With about two square feet of cooking space on each grill, you'll need at least eight of them to feed everyone at about the same time. You're going to need fifty pounds of charcoal briquets and two one-quart cans of lighter fluid. Ask two or three dependable relatives or friends to stash their own Hibachis in their trunks, just in case.

To economize briquets and lighter fluid, layer the grill bottom with briquets, and then pile them two or three-high in a pyramid shape. Douse the pyramid with lighter fluid, and light it with two or three wooden stick matches at each bottom corner. Wait twenty minutes and then spread the briquets over the cooking area. This insures maximum cooking heat from a minimum number of briquets.

How should the panfish be cooked over those glowing coals, and what will you serve with it? Cook each fish right on the grill as is. And, to enhance the flavor further, brush each fish on both sides with melted butter. For each working grill, you'll need a small bowl, one stick of butter, a baster and food tongs or a spatula. Place the bowl on the corner of the grill to keep the butter warm.

You should also brush the body cavity of each panfish with butter. Lemon juice, onion flakes, dill and thyme sprinkled in the butter bowls

will add flavor to your grilled panfish. Cook the fish 10-15 minutes, turning them on the grill occasionally.

Show your guests how to gobble down a grilled panfish without fussing over small bones. First, hold the cooked critter so that it faces you. Now, with a firm hold on the tail-end of the dorsal (back) fin, pull gently out and toward you. As the fin and delicate bone structure come out of the tender cooked flesh, keep inching your grasp along the fin, pulling out and towards you. Do the same for the anal fin. Now you can get at the meat on both sides of the rib cage without a knife and fork.

Serve fresh corn on the cob and foil-wrapped baked potatoes with your panfish. You can make those hot grills do triple duty this way. You'll need about 120 ears of corn and at least sixty eight-ounce potatoes.

Corn is easy to get this time of year, but for safety's sake, special order the corn a few days ahead of the fish feast from your local supermarket or wholesale produce dealer. When you get the corn, leave the husks on. Prepare the corn for cooking the day of your feast by pulling down the husks and removing the silk from each ear. Then rinse each ear in cold water, and rewrap the ear in its husk. Cook the corn right on the grill for twenty minutes, turning the ears every so often. Provide another bowl of melted butter (with salt and pepper added) and a baster at each grill so that your corn-addicted relatives can smear their corn and potatoes with salted butter hot off the grill.

Wrap each potato in aluminum foil and place them around the edges of your hot grills. Let the potatoes cook about forty-five minutes, turning them occasionally. Poke each potato with a fork, if it's soft, it's ready for serving.

Do these cooking and preparation instructions seem complicated and confusing? They're really not. Here's how to tame the feast monster further: go through these instructions again from the beginning and make a list of the food quantities, equipment, and things to do. Next to each item you can write *when* everything needs to be done and you can assign family members to help out. In addition, consider carefully any special needs or requirements for your particular fish feast situation.

Bait Up

by Don Kingery

illustrated by

Ray Piccolin

DOBSONFLIES

The larvae of the dobsonflies probably have more nicknames than any other type of bait. The most common of these are hellgrammite, hell diver, dobson, crawler, pincer bug, and conption bug. Whatever you call them, they are rated one of the best bass baits in North America. They frequent the riffles of swift streams, capturing and feeding on other insect larvae. Be careful when handling them as they have strong jaws and love to use them on the fingers of unwary fishermen. Hellgrammites grow up to three inches long, and are easily collected year-round by turning over rocks and holding a seine directly downstream, or, by turning over rocks and picking them off by hand. Store hellgrammites in a bait box or other container with damp moss, wet leaves or peatmoss, and keep them cool. They keep best if stored in jars of water in the refrigerator. The colder the refrigerator, the longer they will survive; but, don't freeze them. Hellgrammites can also be kept in an aquarium and fed bits of meat and other aquatic larvae. But, since they are very cannibalistic, you will find your stock gradually diminishing as time passes.

Hook hellgrammites under the "collar" or through the tail and drift them along a stream bottom or put them on a bobber next to a likely look-

ing stump. In deep water let it sit on the bottom for a couple of minutes, then retrieve it with slow, short (two-to three-inch) twitches. If nothing takes it, cast to a new area and repeat. When fishing hellgrammites on the bottom, it pays to cut off the two small hooked projections on the tail end. If you don't, the insect will use them to grab onto something solid and you've lost your bait. Hellgrammites are hardy creatures and will take a lot of punishment, three and four fish often being taken on the same one. Incidentally, if worked properly, dead hellgrammites will take almost as many fish as live ones.

The adult hellgrammites or dobsonflies are often attracted to lights near streams. The large jaws of the males look fierce, but are harmless, serving only to hold the female during mating. These insects are excellent bait either alive or dead. Simply float them over snags or through likely looking holes and expect a big fish to take them. Although the larvae spend up to three years maturing, the adults, having nonfunctional mouth parts, cannot feed and seldom live more than a few days.

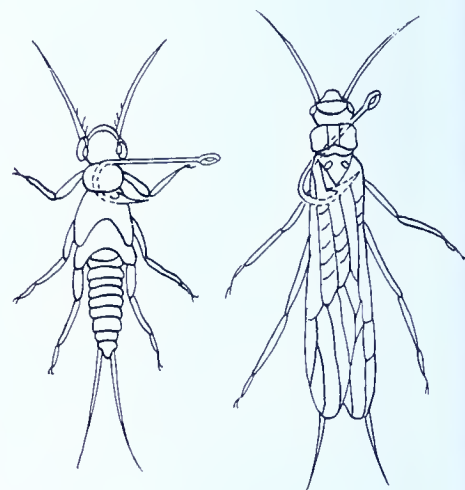
Alder flies are close relatives of the dobsonflies. The larvae look like hellgrammites but are smaller, only growing to about an inch. They are found in ponds and slow quiet areas of streams. Look for them under rocks, or scoop up a small sieve full of mud and bottom debris and sort through it. Since alder flies complete a life cycle each year, the larvae are most common in the fall, winter and spring, while the adults are plentiful in the summer. Store and fish them exactly as you would dobsonflies.

STONE FLIES

Plecoptera, the stone flies, or salmon flies, as they are often called, are found under stones and in debris in every kind of running water, from small brooks to large rivers. Small (two inches or less) and very flat, the nymphs are easily recognized by their two tail filaments. They resemble mayfly nymphs but most mayfly nymphs have three tail filaments. Collect them by hand-picking from the undersides of rocks, or by turning over rocks and stirring up underwater debris while holding a fine mesh screen downstream. The adults can be

collected around lights at night with a fine net. Most stone fly nymphs are carnivorous, feeding on mayfly nymphs and other smaller larvae. The rest are scavengers, feeding on algae and vegetative debris.

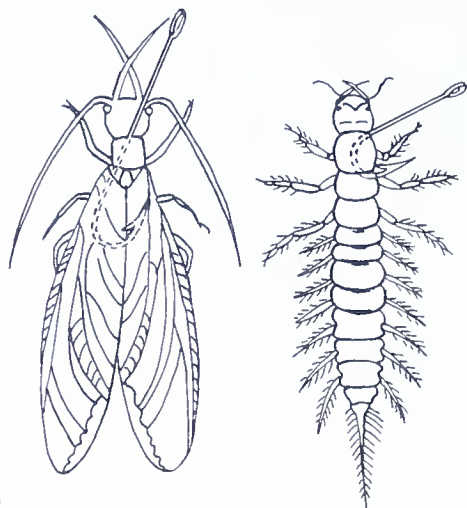
Because of their large oxygen requirement, these insects are very difficult to keep or raise in an aquarium. Instead, keep them in jars of water in the refrigerator, or if a small stream is handy, in a wire cage about two thirds under water. This will keep any emerging adults from drowning. The adults emerge in early spring often in large numbers, after an aquatic life span of one to three years.



These adults are eagerly taken by trout and other fish. Collect the nymphs year-round and fish them as you would mayfly nymphs on fine wire hooks (see mayflies). Fish the adults by drifting them on the surface with a fly rod.

MAYFLIES

Mayflies are famous for their spontaneous hatches, millions often hatching in a single night. There are dozens of documented accounts of mayflies causing roads to be closed as their accumulated bodies made the surface too slippery to drive on. Adult mayflies are very delicate insects, seldom exceeding two inches in length, and are recognized by two or three long filaments on the tip of the abdomen. The wings, which are held vertically over the back, have many veins and are often transparent. Because adult mayflies have only vestigial mouth parts and cannot eat, few of the over five hundred species live for more than twenty-four hours after emerging. However some species have been noted to survive for over a



week. After mating, the female either goes under water to deposit her eggs or drops them into the water in packets, each packet containing several hundred eggs.

After hatching, the larvae or nymphs live under water for one to three years, depending on the species. Mayfly nymphs are slim, often flat insects with three or, rarely, two long filaments on the abdomen. Their coloration varies among brown, gray, black, reddish, or light green, and the insects themselves will be found in all types of aquatic habitat. Look for them burrowing in the bottom, climbing on vegetation, clinging to the underside of rocks and just sitting on the bottom. In general mayfly nymphs are herbivorous, serving as prey for other aquatic invertebrates and fish. They are among the most abundant insect in a stream and are captured by turning over rocks and hand picking before they scurry away. For some reason, the biggest specimens are always under the largest, heaviest rocks — at least it seems that way. Another productive technique is stirring up the bottom and turning over rocks while holding a sieve or fine net downstream. Burrowers are picked up by scooping through the mud and climbers by sweeping or raking vegetation the same way you would capture dragonfly larvae (see dragonflies).

Take a fly rod and the largest nymph you can find and using very small hooks, drift it just off the bottom. Strike the instant you feel a fish as the larvae are so soft that they come off the hook at the first bite. Adult mayflies should also be fished with a fly rod and small hooks. Drift them on the surface or dabble them around logs and lily pads. Mayflies

will take fish equally well — either dead or alive.

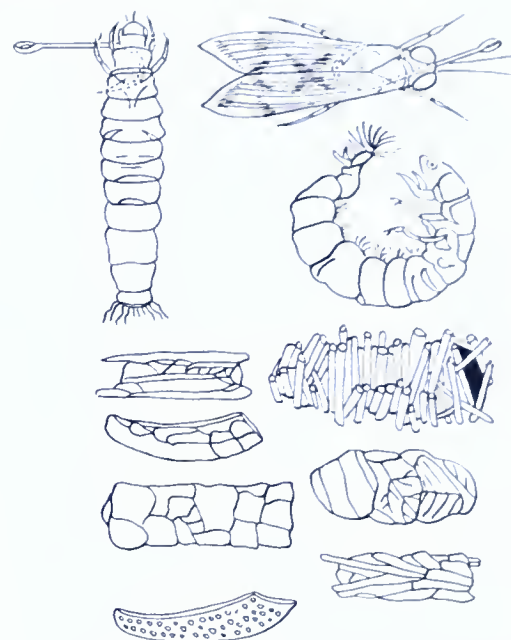
Mayfly larvae are easily kept and raised in an aquarium as long as there is adequate food and the water is well aerated. They can also be kept indefinitely in water-filled jars in the refrigerator; but, since they can be collected year-round and it's so easy to pick up several dozen right at the stream, it hardly seems worth the effort. Adult mayflies are easily netted or picked by hand from their resting places. They are also attracted to light at night and can be gathered and dried for future use. Dried specimens are most easily softened by placing them in a jar with some damp rags or paper for twelve hours.

CADDIS FLIES

Adult caddis flies are very similar in appearance to moths. The majority of the thirty-six hundred species on North America are tan, brown, grayish, or black in color and, like moths, are predominantly nocturnal. The most obvious differences between moths and caddis flies are that the latter hold the wings trimly against the body (most moths don't), and caddis flies have longer antennae in proportion to their body length than moths.

The larvae are all aquatic and occur in all types of freshwater habitats. Their common names include caddis creeper, caddisworm, reedamite and stick worm. These are the case builders. Depending on the species, they utilize sand grains, small stones, pebbles, twigs, grass, bark, leaves and other debris to construct hollow cases which they use as shells, often dragging them about and living in them for the duration of their aquatic life stage. As a general rule, larvae inhabiting quiet pools or ponds build portable cases out of light organic debris while larvae in fast riffles build cases out of gravel, stones, snail shells and other heavier materials, sometimes gluing them to the underside of rocks.

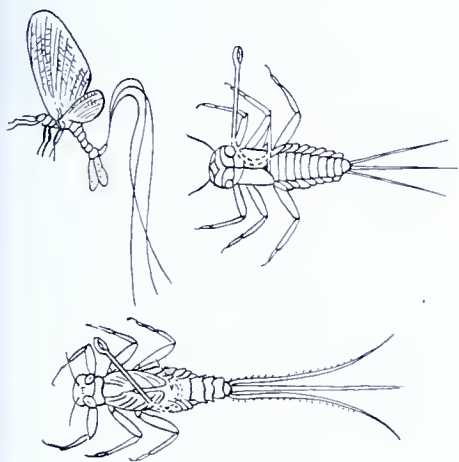
The larvae are either omnivores or carnivores, feeding on diatoms, algae, small crustaceans, small worms, or insect larvae which they capture as they crawl around or trap in underwater nets, depending on the species. They vary in color from green to tan and from gray to white or cream and reach a maximum length of 1½ inches.



These caddis larvae are easily collected in shallow riffles, often in great numbers, by turning over rocks and picking off the cases (they don't bite). Hold a seine downstream while doing this so you don't miss the specimens that would be washed away by the current. The more active species can be caught by simply watching the bottom and picking them up or netting them as they reveal themselves by crawling about. Specimens in deep ponds are captured by scooping along the bottom with a long handled net or sieve.

Caddis fly larvae keep for weeks in water-filled jars in a refrigerator. They can also be kept in an aquarium or minnow bucket and will survive as long as they have plenty of oxygen and food. Caddis fly larvae can be fished either with or without the case, the fish don't seem to have any preference. To remove the larvae from their cases, it is best to break or cut the case, and then pull the insect out. Many species have strong anal hooks with which they hold on to the case and pulling results in only half a larva. Some anglers break off the back of the case, put the case between their lips and gently blow to force the larva out. Hook one or more through the body or through the collar just behind the head and fish them on or just off the bottom. Retrieve them slowly, pausing often.

Adult caddis flies are attracted to lights at night, and can be netted or caught in jars. Select the largest specimens and fish them (dead or alive) on light tackle by dabbling them across the surface around lily pads and brush.



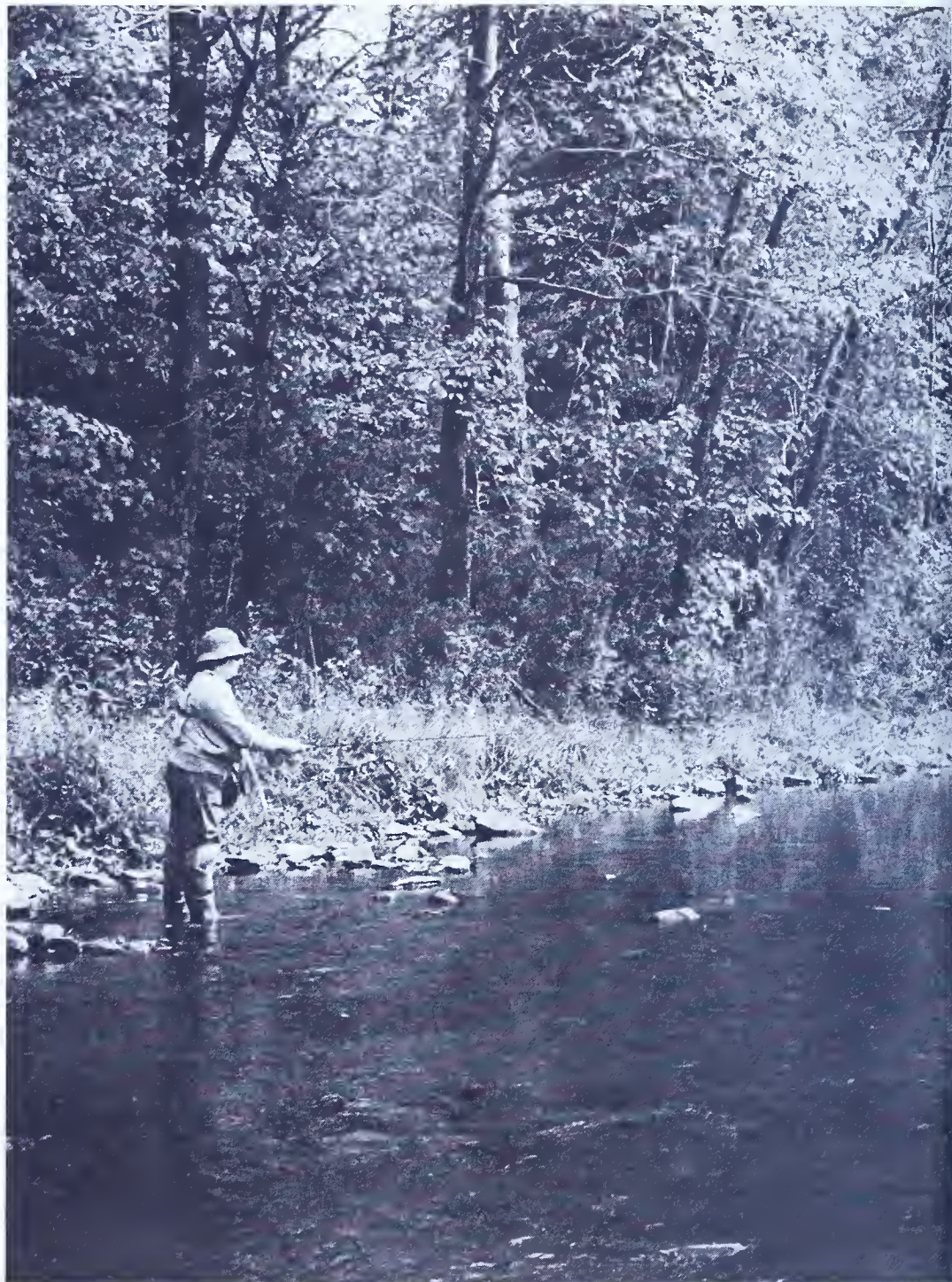
When I pulled off onto the grass covered parking spot, I noticed another car there — one of the few I had seen in the small valley carved by the Dyberry Creek during the summer. But of the fisherman to whom I supposed it belonged there was no sign. Since there was more than enough water for two I slipped into my hip boots and headed for the stream. When I toiled back through the thick brush several hours later, I found an angler, clearly a veteran of many seasons, sprawled on the grass, sipping a can of beer and watching the heat demons shimmer on the tarmac road. We exchanged pleasantries and as I settled down into the shade he remarked that things were not what they used to be.

In the broiling heat of that summer afternoon the old man was moved by the deepest emotions. He told me, in a voice that often seemed on the verge of cracking, how all the good things in life were being destroyed. The fields and woodlots he hunted as a boy were gone, sliced up into leisure home developments. The Interstate snaked over the ridges and hills, its shoulders lined with road-killed deer and racoons. The quiet ways of the mountains were things of the past.

And, to make matters worse, trout fishing was not what it once was. Gone were the days when Coachmen and Cowdungs, Cahills and Coffin Flies took trout. They still had a place in the fly box, but there were also Letort Hoppers, Crowe Beetles, Jassids, ants, and those terrifyingly tiny “tricos.” While all these dark and ugly “things” did take trout, it just wasn’t the same as in years gone by when Light Cahills and Cream Variants could be fished to rising trout. Nowadays, he lamented, it seemed the fish just didn’t respond to the old reliable flies the way they used to.

The old angler was in no mood for a lecture from a young whippersnapper so I simply nodded my head in mute agreement. Much of what he said was true. But many of his opinions on summer trout fishing, which I had heard before and will no doubt hear again, were far from the target.

The staples of “second season” anglers are various terrestrial imitations and flies tied to mimic the “hidden hatches” of miniscule mayflies. But all too often summer fishing is limited



Low, clear summer streams, like this Pocono stream call for special flies.

to the early morning hours when the “trikes” are active or those all too few days when a “grasshopper wind” sweeps down the valleys. By doing this, chances to fish during fine hatches of may and caddis flies are passed up. While some emergences may be growing sparse, others, such as the tan *Helicopsyche* caddis are increasing in numbers and, it appears, expanding their range.

However, the old-timer hit the bullseye when he said the dry flies that duped trout during hatches twenty years ago are scorned by today’s fish. All those cherished patterns — the Paulinskills, the Dun Variants, the

Cream Foxes, the Blue Quills, the Henryvilles — have become virtually obsolete on the streams of summer.

In July and August, the low clear water calls for flies that are as close to exact imitations as it is possible to create. The old flies, or any flies tied in the old style, simply are not *imitative* enough. Heavy, unnaturally colored wings and bushy hackle create impressions that summer trout, fish which have survived the onslaughts of regiment after regiment of springtime anglers, recognize as false. The result is that fish refuse the fly and fishermen make a first hand acquaintance with the utter frustration

Summer Trout . . .

Summer Flies

by A. G. "Doc" Eastby

of being forced to watch helplessly while the trout gorge themselves on succulent sedges or delicious duns.

It is not difficult, however, to select and fish flies that will take trout during summer hatches. For the nontier this means looking beyond most neighborhood tackle shops or, in desperation, using a pair of scissors to judiciously trim away some excess hackle so the silhouette of the fly is clear, clean, and uncluttered. For the tier, or the angler who knows a tier willing to create flies to please fish and not fishermen, the situation is easier to handle. Summer flies are somewhat out of the ordinary, and they may require some getting used to. But for those willing to try something new and unusual, these flies will make the difference between taking trout and a bout of high blood pressure, the inevitable result of watching dozens of fish feeding voraciously and not being able to catch even a foolish kindergarten drop out.

Mayfly simulations can be dressed in the thorax-style advocated for limestone streams. They can also be tied in a modified thorax style: either cut-wings or a clump of polypropylene yarn with the hackle trimmed top and bottom and body material dubbed in a "figure eight" over and around the trimmed hackle. The currently popular "parachute" or "paradun" type of fly is also an alternative that can be explored. The most impressively imitative dry fly is the "sidewinder" tied with wings of duck wing quill segments and no hackle whatsoever. All of these will do the job as long as they are tied in the proper colors. The most useful shades and combinations are slate (very dark

dun) wings, red-brown body and dark ginger hackle and tails in sizes ten through twenty (*Isonychia* species, *Paraleptophlebias*, and some *Ephemerellas*); cream wings, cream body, and cream hackle and tails in sizes ten through sixteen (*Ephron*, *Ephemer*, and some *Potamanthus* and *Stenonema* species); light dun wings, creamy yellow body and light ginger hackle and tails in sizes twelve through sixteen (*Stenonema*); yellow wings, yellow bodies, and sulphur hackle and tails in sizes ten through sixteen (*Potamanthus*, *Stenonema*, and some *Ephemer*); and light dun wings, yellowish olive body, and sulphur hackle and tails in sizes twelve through eighteen (*Epeorus*, *Stenonema*, and some *Ephemerellas*).

Of importance equal to that of duns are spinners, simulations of the adult or imago stage of the mayfly. Tied with very sparse polypropylene or hackle wings, in a variety of colors (dun wings — red brown body; dun wings — yellow body; and cream wings — cream body) and a full range of sizes (ten through eighteen) they will do what is asked of them: catch trout. The key point to keep in mind is that the wings must be very, very sparse. Between ten and twenty strands of yarn are more than enough.

Caddis fly hatches are often more important than mayflies. Many of the species active in the summer are very small, but their size belies their importance. They will often trigger feeding sprees rivaling the orgies during a trico or caenis hatch.

Recently, publicity has been given to caddis imitations tied with wings of hackle fibers, deer body hair, and mink tail guard hair. These flies work

well but on summer streams other types are better. The most strikingly realistic caddis are those with wing quill segment wings tied downwing over the body. Very sparse hackle is palmered over the front half of the body and then trimmed top and bottom before the wing is secured in place. However, these are very fragile things. The wings quickly fray and split apart no matter how they are prepared. Every bit as effective, and far more durable, is the delta wing caddis tied with two hackle tips projecting out from the sides of the fly.

There are hundreds of species of caddis. To imitate all of them is impossible. Fortunately, a few basic patterns will generally suffice. Light tan (sizes sixteen through twenty-two), light dun wings and cream body (sizes sixteen through twenty-two), light brown (sizes eighteen through twenty-two), grayish-brown (sizes eighteen and twenty), cream wings and light olive body (sizes twenty through twenty-four), and brown wings and olive body (sizes sixteen through twenty) are the color combinations that should be carried.

During both mayfly and caddis fly hatches trout will often concentrate on the nymphs as they writhe and struggle in surface film. To capitalize on this, emergers can be tied. Fine wire hooks are used and polypropylene dubbing is substituted for the fur called for in the nymph pattern. Polypropylene yarn is used in place of the conventional wing quill segment for wing cases or wing pads. A turn or two of "dry fly grade" hackle finishes off a devastating fly. Heavily dressed with silicone and presented in the classic dry fly man-



A modified thorax style fly, above, is a good simulation of the mayfly; the most impressive imitation of the mayfly, a "sidewinder" no-hackle dun, is shown below. Adult caddis flies or sedges are well imitated by a fly with sparse hackle and a duck wing quill segment tied parallel to the body, above right; the delta wing caddis, below right, is another versatile and effective presentation — particularly in summer.



ner, floating nymphs will often elicit rises from trout with Ph.D.'s in entomology.

Of course, there are other requirements for summer trout: the right tackle, a good stream and the ability to present flies properly. The veteran fisherman I encountered on that sizzling August day obviously knew this.

That Dyberry regular had seen that he needed special flies — beetle, ant, and grasshopper counterfeits and bits of fur and fiber to match the "trikes" — to handle situations unique to the summer. If he had only

used his experience and common sense he would have concluded that he also needed special flies: sidewinders, delta-wing caddis, floating nymphs, and poly-wing spinners to deal with commonplace events such as mayfly or caddis fly hatches under the exacting conditions confronting the summer flyfisher.

Once he had recognized that summer trout in summer streams demand, and deserve, flies designed to suit their discerning and discriminating tastes, the old fly-rodder would have been able to tie his own summer

flies. Then, when the evening shadows crept across the valley, he could have waded into casting position and caught trout. Should any other anglers have been there, they probably would have shaken their heads in disbelief and muttered silent oaths. Perhaps the somber, melancholy mood that permeated the old angler's conversation and the sense of loss he expressed would have been lessened. Certainly he would have felt a glow of pride and accomplishment because he would have caught summer trout . . . on summer flies.

A Little Fishing Tale

by Larry Servais

Some wag said, "Old fishermen don't die; they just smell that way."

Trout fishermen would resent a statement like that. They think they are a cut above other kinds of fishermen, even in the aroma department. But they do have more of a stock of odd and humorous tales of piscatorial adventures. Possibly this is because a trout fisherman gets right down into the fish's own element to pursue him. Or possibly it is because the average trout fisherman's catch is of far less poundage than that of other departments, so this is a way of making up the deficit. But, things do seem to happen more often to trout fishermen.

Jim, an old trout fishing friend, many years ago told me a little story which I still muse over. He was a high school teacher, and in charge of a boy's club at school which once a year took a few day's trip up to a woodland lake. They mostly stuck to the lake — swimming, boating and fishing there. But there was one lad, who said he wanted to go trout-fishing — he had heard so much about it, and he had never tried it.

He had a heavy 9-foot bamboo rod, more suitable for bass, with a fly line, but a leader made of eight-pound test monofilament. And, tied to it some-

thing that looked like a bedraggled white miller on a number six hook, the only fly he had. Jim took in the situation, and handled it like other minor things that come up in managing two dozen boys in camp.

"I can't take you," he said, "but I'll tell you what I'd do. I'd hike right out to the highway, and then down a half mile to the bridge and fish right there." He noted a bit of disappointment in the boy's face at the idea of fishing right next to the highway. "That's as good a stretch as any," he said, in his best salesmanship manner. "Most fishermen try to get away from a road and sometimes a nice piece of water like that isn't hit nearly as hard as places a half-mile up or downstream."

In a half-hour the kid was back, out of breath, and holding an eighteen-inch rainbow with the fly still firmly attached to its lower jaw. "I did just what you said," he explained to Jim, who stood looking goggle-eyed at the trout. On his first cast the fly had drifted under the bridge. There was a splash and this trout was doing cartwheels on the water at the end of his line. He horsed it up on the bank, grabbed it and ran all the way back to camp.

As Jim finished the tale, I took a

long pull on my cigar. Here was another of those things that happen to trout fishermen — and true. They beat fiction.

"That kid may be ruined," I observed. "A trout fisherman is supposed to put in a long, hard apprenticeship before he catches a fish like that. On the other hand that experience may carry him through a couple of years of mosquitoes, blackflies, cold water, mud, brush, and other frustrations and sufferings on the way to learning how to outwit trout."

I noted a faraway look in Jim's eyes. "That was a traumatic experience for you. Catching a trout was the last thing you expected him to do when you sent him fishing next to the highway."

"I didn't expect him to catch a trout anywhere," replied Jim, "and I decided he may as well be somewhere where he wouldn't get lost in the woods."

"But," I said, intrigued with the psychological overtones of the experience, "if you had known there was a big rainbow under that bridge gulping up anything that floated past you would have been down there after it even if the whole camp full of kids got lost."

Jim smiled, a crooked, reflective smile. "I probably would have," he admitted.

"Sure you would have," I affirmed. "You'd have figured, 'first things first.' That's the test of a real trout fisherman!"

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Driftwood Artistry

by Wes Bower



To the author, this unusual piece of driftwood resembled the neck of a heron

Everyone is blessed with some degree of artistic ability. With a fortunate few it is a highly developed skill which enables them to create what is commonly referred to as "works of art." Woodcarvers, painters and sculptors are a few examples of those we commonly accept as artists.

Unfortunately some of us do not possess this artistic genius and we must be content to individually express ourselves on a different scale. Many Keystone State residents have been finding what we refer to as "driftwood artistry" to be a way to fulfill their creative needs.

Most outdoor-oriented people walking through the woods, or along stream banks, or canoeing up and down our Commonwealth lakes and rivers are inclined to utilize all their native senses to get complete enjoyment from excursions afield. A clump

of cattails framing an old moss covered stump with marsh marigolds brightening the waterline is a natural painting not soon forgotten.

But why should you be content to enjoy only nostalgic memories from your occasional trips afield? Some imaginative nature lovers have found a way to extend the pleasure derived from their favorite pastimes. These enterprising individuals have become driftwood collectors. The best thing about this sideline hobby is that it can be pursued while fishing, boating, camping, hiking, picture taking, or whatever happens to be "doing your thing."

Why don't you start keeping your eyes open for interesting wood formations; those roots, limbs, logs, stumps and other water-eroded pieces of bleached wood commonly referred to as driftwood.

Pennsylvania outdoors people have

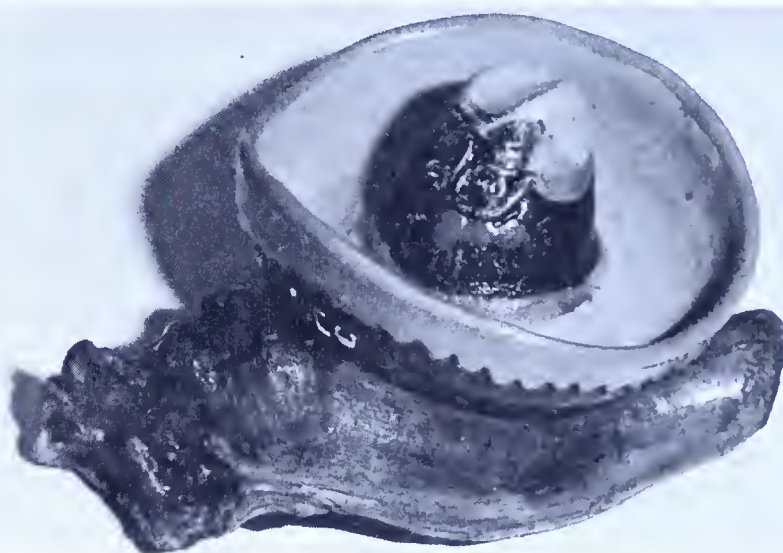
always been noted for possessing a lot of native ingenuity and they quickly find that driftwood collecting is a simple venture. After the collecting, by using a little bit of time and a lot of imagination, the sky's the limit as far as driftwood artistry is concerned.

Cleaning your collection is easy. Make a trip to the local car wash. By utilizing their high pressure water hose, you can quickly and efficiently clean all the nooks and crannies of dirt and debris. The water pressure also chips off the loose pieces of bark on the outer layer that would soon fall off anyway.

Then the fun projects begin. Large pieces of bleached-out driftwood can be arranged artistically around flower gardens and patios. Left alone they continue to bleach and place a lot of emphasis on your landscaping projects. A plus factor is that this project is accomplished at very little



Driftwood collections are displayed in living rooms or family rooms . . . larger collections decorate patios. All sizes, from small tabletop pieces to "floor models," add to the decor.



cost. For those hilly hard-to-mow areas, a rock garden accented with several unusual wood formations is a satisfying project.

Another possibility is to take a particular intriguing memento from a trip afield, refinish it and use it as an addition to your living room furniture.

Smaller limbs, roots, or tree crotches can also be utilized. A small amount of sanding, varnishing and staining can result in bases for ashtrays, book ends, decorative center pieces and other unusual conversation makers. For those of you who like to do a little woodcarving, your individual creations can be more interesting because they started out as pieces of driftwood.

Another innovative use is for photo enthusiasts to locate driftwood on an outdoor picture-taking excursion. Then using snapshots from that particular outing, utilize your finds as

bases or frames for your photos. A little sanding and varnishing, then some decoupage and what better gift to present to that special friend. It can be a personalized remembrance of "happy things from happy days."

The list is endless. Why not put your imagination to work? The next time you have that big fish or wildlife trophy mounted, why not provide your own base for the mount? It becomes even more meaningful if it were driftwood collected on the same excursion when you landed your catch. How about a place in your den to display your favorite fishing plugs? When low water comes, with a little bit of work you can recover a particular stump which stole your plugs on previous fishing trips. What better retribution than to use that same stump, or part of it, to display some of your fishing gear.

If you haven't tried driftwood

collecting, the next time you go afield, keep a keen eye peeled. You can enjoy a lot of extra pleasant hours for your effort.

One thing's for sure, and that is that collecting driftwood is not a recent fad. Over 100 years ago Celia Loughton Thaxter set these words in verse:

*Across the narrow beach we flit
One little sandpiper and I
And fast I gather bit by bit
The scattered driftwood, bleached
and dry
The wild waves reach their hands
for it
The wild wind raves, the tides run
high
And up and down the beach we flit
One little sandpiper and I*

We're betting that in another 100 years Pennsylvania's outdoor enthusiasts will still be practicing their version of driftwood artistry.



"Since the early 1970's . . . biologists have been closely observing the trout population in Big Spring Creek."

The Big Spring Creek Barrier — a "family" affair

by Richard A. Snyder
Coldwater Unit Leader

In 1866 the Fish Commission was officially established for the purpose of protecting and enhancing the fisheries resources of the state and providing varied angling opportunities in Pennsylvania. A recently finished Commission project is a good example of the first mentioned responsibility and how the Commission's family works together to fulfill its responsibilities.

What do a carpenter, secretary, fish culturist, biologist, maintenance repairman and a law enforcement officer have in common? Plenty, when it comes to a typical Fish Commission project. Just recently the Commission installed a barrier in Big Spring Creek, Cumberland County, to prevent the movement of brown and rainbow trout into a section being managed specifically for brook trout. The reason for the barrier is perhaps unique but the project typifies the cooperation and togetherness of the employees of the Commission.

Since the early 1970's, biologists of the Commission's Fisheries Management Section have been closely

observing the trout population in Big Spring Creek with annual and later semiannual population checks with electrofishing gear. Why so much attention to this world famous limestone stream? Except for isolated, small populations as reported in the Letort, Cumberland County, or as found in Monocacy Creek, Northampton County, Big Spring Creek is perhaps the last major limestone stream with a reproducing population of brook trout. In Big Spring Creek, brookies are known to attain lengths in excess of 15 inches with a seventeen incher not that uncommon.

Soon after acquiring the spring and the first three miles downstream, the Commission developed a management plan for the stream offering a section for fly angling only, one for all types of angling, and closed the upstream half-mile to angling. At that time, Commission biologists desired to study the effects of special regulation and the closed upstream area which contained most of the brook trout.

Problems began almost immediately for the brook trout. During

the initial production year at the new Big Spring Hatchery, a large number of fingerlings, mostly rainbow trout, escaped into the stream. About the same time, as part of the Commission's Stream Improvement Program, an old dam was breached downstream of the brook trout area. The breaching encouraged spawning brown trout to move into the headwaters. Soon the headwaters contained large numbers of brown and rainbow trout which developed into reproducing populations. In fact, the two species found such favorable conditions that early growth rates were fantastic and rivaled even those attained by hatchery trout. This posed problems for the smaller brook trout.

Census work done during the semiannual electrofishing checks indicated the brook trout population was suffering. The lack of food was not the problem as Big Spring Creek, being a limestone stream, is very fertile and supports a superabundant invertebrate population, especially scuds and sowbugs. The problem seems to be related to the genetics of

the brook trout and the competition from the brown and rainbow trout. The Big Spring strain of brook trout is now a mixture of the original strain, introduced commercial fish, and those stocked by the Commission. Today, some of the differences in color and body shape can probably be credited to the different strains. The timing of spawning may also reflect the different strains as some brook trout spawn in late September while others do not spawn until late March. Unfortunately, the brown and rainbow trout spawn in the early fall and the newly emerging fry gain several months growth on the brook trout. Complicating matters is the fact that most of the prime spawning areas of the brook trout are concentrated in just one or two spots in the upstream half-mile of stream. These same locations were also favored as year-round habitat for large numbers of rainbow and brown trout. Predation by rainbow and brown trout seemed to be a limiting factor on the population.

To counter the decrease in the brook trout population as a result of the increasing populations of brown and rainbow trout, the Commission instituted a change in the special regulations area effective January 1, 1976. The daily creel limit of one 20-inch trout was changed to two 15-inch trout. This measure was necessary to encourage the harvest of the faster growing brown and rainbow trout and at the same time would protect the brook trout. Since the brook trout normally become sexually mature long before attaining 15 inches in length, the minimum size of 15 inches would protect the majority of the population and still permit the taking of a few trophy fish. On the other hand, the faster-growing browns and rainbows were reaching 15 inches before they became mature and harvesting these fish before spawning became the objective of the liberalized creel and size limits. The previously closed headwaters were opened to angling, under special regulations, to encourage harvest of browns and rainbows thereby reducing their numbers.

The semiannual census work in 1976 indicated that the regulation changes were successful in reducing the numbers of large trout from the 1975 levels. However, the good growth rate and a lack of concentrated angling pressure late in

1976 saw remaining browns and rainbows compensate for the numbers removed. Thus, the brook trout still faced a substantial population of large brown and rainbow trout. The concept of "fishing-for-fun" had caught on and more anglers seemed to be fishing more for fun and less for meat — an admirable trait for any group of anglers. Angling pressure alone couldn't be counted on to manage the Big Spring Creek brook trout.

Another problem regarding the fate of the brook trout was becoming obvious: the habitat in areas favored by the brook trout was undergoing serious alterations due to recent storms. Twice — in less than a year's time — the watershed experienced exceptionally heavy rains that resulted in floods which were catastrophic for the brook trout area. Considerable quantities of vegetation so important as cover for the young brook trout were washed away. Much of this vegetation grows underwater and normally persists through the winter, providing excellent cover for the emerging fry. Unfortunately, during the winter of 1976/1977 with its record-setting cold, additional areas were frozen and spring revegetation took longer than usual. The census work in June 1977 indicated the brook trout fishery was in serious danger of being replaced by the brown and rainbow trout. If the brook trout population was to be maintained through natural reproduction, something was going to have to be done soon before another spawning season started on Big Spring Creek.

Fisheries Management Section biologists for some time had considered the use of additional special regulations to enhance the brook trout population. One possible solution was to reduce the size limit well below 15 inches and increase the creel limit on brown and rainbow trout while protecting the brook trout. This approach, while difficult to implement due to confusing regulations on other special regulations areas, may be a worthwhile solution once a stable brook trout population is attained. However, the time lag between establishing new regulations and seeing if there was a favorable response from the trout population would be long and risky because the immediate threat to the present brook trout population was too great. Therefore,

the immediate solution was to isolate an area specifically for the brook trout.

The source of Big Spring Creek is a very large spring. Immediately downstream from the spring is the intake for Big Spring Hatchery. For at least the first half-mile of the creek no tributaries of significant size enter; therefore, if the stream could be blocked at one point an area could be isolated for the brook trout. The water from the hatchery offers a possible source of brown and rainbow trout and would also have to be blocked.

Don Hazel, of the Engineering Division's Construction Branch, fabricated an aluminum fish rack consisting of closely spaced rods in a metal frame. Personnel from the Big Spring Hatchery eventually installed the rack and it has been effective in stopping escaping fish.

Summer time is a very poor time to initiate unplanned field work, as most Commission personnel are already deeply involved in planned activities. The Commission's Division of Engineering, during the summer of 1977, was involved in over 250 individual projects of developing and maintaining access area parking lots, sanitation facilities and offices all over the state. Tackling the barrier project did not look good for the summer of 1977. However, Engineering Division Chief Wilbert Hobbs assured that any support possible would be given to the project if the Division of Fisheries could handle the construction.

Since the Fisheries Management Section under Bob Hesser had initially requested the barrier, Del Graff, Chief, Division of Fisheries, encouraged the idea of the project — especially with the promised support from the engineers. Promised material, equipment and advice, the Coldwater Unit began to assemble a work team. Through Ken Corl, Chief, Coldwater Production, and Bill Kennedy, Superintendent, Benner Spring Fish Cultural Station, Dick Waite, a well-qualified mechanic, carpenter and general handyman, was freed to design and help construct the barrier. Within the Commission, Dick is already rather well-known for his work in designing and constructing many of the tanks used on today's stocking trucks.

During a quick reconnaissance trip

to Big Spring Creek, Dick Waite, Col-water Unit Leader Dick Snyder and summer assistant Mike Kaufmann, discussed ideas for the barrier, measured the selected site and formulated plans for construction. The list of materials and equipment needed began to grow and threatened to discourage the project. Construction and Maintenance Section Chief Gene Smith and Property Maintenance Branch Chief Dan O'Neill came to the aid of the biologists and "donated" the required lumber. Before discussions on the barrier could be held with reviewing supervisors, drawings were needed. Draftsman Stephen Greene took the sketchy ideas from the reconnaissance team and drew preliminary plans of the barrier in short order.

The Barrier

Initially, the barrier was to consist of a small dam with a downstream maze of baffles which would deflect the current of water several times. This plan was based on the theory that trout moving upstream and attempting to jump into the maze would not find a single strong current of water but several weak currents bouncing off odd-placed deflectors. Thus, it would be impossible for trout to negotiate such a structure. However, the low gradient of this

stream did not favor the construction of a dam high enough to accommodate the maze of baffles.

The final barrier design consists of a simple dam of two telephone poles laid on top of each other behind the head walls of an old dam. As water comes over the dam, it falls onto a platform extending across the entire stream. The platform consists of $\frac{3}{4}$ -inch thick boards laid on edge with a $\frac{3}{4}$ -inch space between each board. Water falls through the $\frac{3}{4}$ -inch openings to the stream below and trout cannot jump up through these openings nor can they penetrate the tightly made dam. The platform rests on beams and pilings, is eight feet long and slopes gradually downstream. Water pressure then pushes dislodged vegetation over the dam and down the platform.

To facilitate the construction, the platform was made in sections which could be assembled at the site. Each section required 27 eight-foot boards, over 100 $\frac{3}{4}$ -inch plywood spacers, 2 sixty-inch bolts and a hundred or so nails. Making the right size boards from cut lumber required a lot of sawing. Fortunately, the Engineering Construction Unit #II, under Bill McClenahan, gave the new "carpenters" instruction in the use of shop saws. On more than one occasion that day, Bill's crew of Marlan Bowersox, Merle Henk and Herb Probst took

time from other demanding duties to assist the biologists in cutting and loading the more than 150 boards needed. Assembling the sections resulted in a pickup load of lumber, a trash can full of spacers, a large box of nails and 12 bolts and associated hardware for the required 6 sections. Clark Shiffer, Herpetology and Endangered Species Coordinator "volunteered" two afternoons to saw, hammer and assemble the pieces.

The Commission, although being an agency of regulatory nature itself, was still required to have the proper approval for the installation of the dam and barrier. Jack Miller, Chief, Fisheries Environmental Services Branch, secured the permit necessary to comply with federal and state regulations on the construction of the instream device, especially for one specifically designed to prohibit the upstream movement of fishes. Jack also made available the services of Ron Tibbott, Hydraulic Engineering Technician, who heads the Commission's stream improvement program. From his busy schedule of working with sportsmen and youth groups all over the state, Ron offered his expertise in the use of field power tools and the construction of similar devices in stream improvement work. Also, Ron had a well-equipped work truck with all the tools necessary to complete the work expected. His



The "Barrier," above. "...the immediate solution was to isolate an area specifically for the brook trout."



"In Big Spring Creek, brookies are known to attain lengths in excess of 15 inches with a seventeen incher not that uncommon."

gadgets included homemade holders for pounding reinforcing rods while under water, an especially valuable tool in the cold water of Big Spring Creek. Ron also obtained some surplus telephone poles from the Huntsdale Hatchery which had been scheduled for a stream improvement project.

The barrier was installed in less than a day's time thanks to the backhoe work of Erwin Wiser of the Big Spring Hatchery, the expertise and tools of Ron Tibbott, the wisdom of Dick Waite and the muscle of Snyder and Kaufmann. Personnel from the Big Spring Hatchery began a daily schedule of visiting the barrier to check its effectiveness in passing dislodged vegetation.

Fish Removal

The week following the installation of the barrier, Fisheries Management Section personnel assembled at Big

Spring Creek to conduct a semiannual population estimate and to remove browns and rainbows from the brook trout area. To expedite the sampling and removal efforts, Area Fisheries Manager Ron Lee and Fisheries Technician Eric Obert from the Tionesta Office joined the crew of Area Fisheries Manager Larry Jackson and Fisheries Technician Bud Baker, Coldwater Unit Leader Dick Snyder and summer assistant Mike Kaufmann. Big Spring Superintendent Wayne Weigle and Maintenance Repairman Erwin Wiser drove truck and assisted with removal efforts.

Over 1,200 trout were captured in the area upstream of the barrier. Approximately 1,000 brown and rainbow trout ranging in size from fingerling to bruisers over 24" long were moved downstream below the barrier where they will still be available to anglers. Fishermen on the disturbed waters, upon learning of the barrier and the associated electrofishing, agreed of its

need and didn't mind having their angling pleasures temporarily interrupted.

Well, before the barrier idea was finalized, Cumberland County Waterways Patrolman Perry Heath and Regional Supervisor Richard Owens met with Management Section personnel in a cooperative effort to lay plans for a smooth operation and to properly notify anglers who frequent the Big Spring Creek area. As a result a news bulletin was prepared for statewide release following the fish removal efforts. Carpenter Don Homan at the Pleasant Gap complex made two large routed signs which informed anglers of the barrier and fish removal operations. Staff from Engineering Division Maintenance Unit IV, under Foreman Ray Stichler, erected the signs along Big Spring Creek.

The fate of the Big Spring brook trout remains to be seen. The 300 or so remaining brook trout in the half-mile section above the barrier should fare well in the absence of the browns and rainbows. Sampling in 1978 will indicate just how the population is doing in the isolated area. The brook trout management area upstream of the barrier represents a rather unique approach to offering the anglers of Pennsylvania the opportunity to fish for naturally reproducing limestone brook trout, while at the same time protecting the population through the use of special size and creel limits.

Although stocking fish and enforcing the law constitute two of the Commission's more obvious activities, numerous other projects and activities are going on every year to protect and enhance the fisheries resources and to offer a varied angling program for Pennsylvania anglers. Unfortunately, many Commission employees never receive the recognition due them for their contribution to the overall operations of the Commission. The Big Spring Creek barrier project, with secretaries Linda Decker, Julie Weaver and Jenny Witherite who typed memos for the project and this manuscript, Ted Smith and Gerald Walck of the Southeast Maintenance Unit who erected the signs, is a typical Commission operation involving dozens of people who in this case may not even know what *Salvelinus fontinalis* is. Therefore, this article is dedicated to all of the Commission's family.

the "scare factor"

by John Crowe



The *scare factor* sounds kind of technical, but all it is is the effect of your presence or that of other fishermen upon the fish you hope to catch. Maybe "scare" isn't the best word for it. If you like alarm or fright, okay; it doesn't matter. But one thing sure: attention to the factor is a very important part of fishing success! Neglect of it is a common cause of failure.

Few of us fishermen realize how much the scare factor can affect our sport. Scare, alarm, or fright is intrinsic in the faculty of wild animals to survive. It is instinctive. As a rule the instinct of wild animals, including fish, for survival or self-preservation is stronger than other urges such as hunger or sex. Reduced to the purposes of this article, that means that scared fish will not feed!

For fishermen, that's bad.

Fishing as a sport is almost wholly based upon the instinctive urge of fish to feed. That is a fundamental principle of the sport — its very substance. We recognize the fact in almost every variation of our pursuit.

Why then do we so often neglect another principle, one which has priority: that *scared, frightened, or alarmed* fish will not feed?

It's quite simple: if a fish is scared, you're not going to catch it — not by fair means. In fact, one method of illegal fishing, "fingering," illustrates the overpowering effect of fear upon fish.

Fishing in Pennsylvania these days suggests contradictions — seeming contradictions — to my statement that if a fish is scared, you're not going to catch it. But in the seeming contradictions the fish is not scared. It is acting, or reacting, in accordance with conditioned reflexes which make it different from a wild, normal fish.

Visit a hatchery. Probably it will be a trout hatchery, for trout seem more adaptable to hatchery rearing than other desirable species native to our state. Walk along the rearing pools and you will be *accompanied* by countless trout in the water beside you, following you. Are these representative of fish famed for their timidity?

They are trout, but not representative. From their emergence as fry they have been accustomed to the likes of you, *people*, beside them. To them you mean nothing harmful; instead, you mean a chance of food, and the bolder the individual trout, the more food he gets.

It is unfortunate that hatchery trout are gullible when first placed in the wild environment of a stream. Or, in a way, *fortunate* because a lot of people can enjoy the thrill of catching them; people who do not have the time, opportunity, or skill to catch them after they have learned to live in the wild.

And they learn quickly. I do not know what time period is required for a hatchery trout to become acclimatized to its new — and natural — environment. I do know it isn't long, and the learning process begins immediately after its stocking. The survivors of the first few days or weeks of fishing become increasingly hard to catch. After a month or two they become indistinguishable from trout native to the stream, and they

scare as readily. Who would catch them cannot walk boldly and noisily along the banks or wade carelessly through the stream. Instinctively the trout have learned that to scare is survival . . . that not to scare is suicide.

The education of a trout — or any other fish — is not a thinking process. It's an instinctive learning process; it's build in. What we call education is an emergence of the trout's natural ability to survive. Any other explanation might be called by the scientists *anthropomorphism*, which is bad even if we don't know what it means.

One of the most interesting experiences in present-day fishing in Pennsylvania is to work over trout in places like Fisherman's Paradise or other FISH-FOR-FUN projects. In them are not only many trout but also many *big* trout. Although the fishing is contrived, unnatural, catching the trout is not easy, not after they have been caught and released, or even pricked, a few times.

Such trout become unbelievably wary of anything with a leader attached. In catching them, or trying to, fishermen resort to ultrafine leader materials. Nevertheless the trout ignore their offerings, meanwhile taking freely unattached items that float by. The presence of many fisherman along the banks does not inhibit feeding activity.

It may be a dirty trick but it is an interesting experiment to take a few old artificial flies, break off the points of the hooks, and throw the flies unattached to the water, say at Fisherman's Paradise or some other fish-for-fun place. You will be amazed at the celerity with which they are taken; usually it doesn't matter whether they are Cahills, Adams, or whatever. You may decide that you have learned what the trout are taking. Thereupon you put the same pattern on your 7X tippet and begin casting. No response, and it doesn't seem to matter whether the leader is sinking or floating. (I do not think this experiment violates the sometime rule of no feeding of fish. The trout won't swallow the flies, and it would not hurt them if they did.)

When someone is introduced to trout fishing at the beginning of a season, or when the fishing is subject to unnatural conditions, he is likely to form opinions which impede his progress toward enjoying the game

for all it is worth. Countless fishermen go out in mid-April, returning with trout. Many go out on published stocking dates in May or June, returning sometimes with trout. But not many go out regularly from season start in April to finish in September or October, returning usually (if not always) with trout — if they want to keep them. Or, if not, having had the fun of catching fish that are worthy objects of angling skill.

Those who do, you can be sure, have observed the old-timer's number one rule in trout fishing: if you want to catch a trout, *don't scare it!*

After trout, or maybe before trout, most popular quarry of Pennsylvania fishermen is bass.

With bass, the scare factor is less obvious in its effect than it is with trout. The principal reason, I think, is that Pennsylvania bass are usually found in more water than are trout. Maybe *bigger* water would be a more accurate term. Fish react predictably according to the water volume or depth available to them. In a small mountain brook, trout are so skittish that it is difficult to get within fishing range; in a larger stream, say one like Penns Creek, the problem is less acute.

However, with bass, the flow or depth of water is usually of such a degree that the problem of approach by an angler is mitigated. That doesn't mean that bass won't scare as do trout, thereby becoming difficult to catch. All you need to do to learn that is to fish a small lake or farm pond.

Sometimes I fish an artificial lake of about 11 acres, one long established. The population of bass, bluegills, and minnows are essentially wild, or natural. The margins are shallow and weed-grown, and fish forage is abundant. It's quite a thrill to watch the disturbance made by sizable bass along the shallow edges as they pursue their prey, especially while you are setting up your tackle to work on them.

But the thrill can fade quickly if you approach the feeding fish carelessly.

Walking the bank, wading, or fishing from a boat, you soon learn that worthwhile bass in shallow water are decidedly skittish. It's easy enough to catch small bass or bluegills, but who is content to hook a 6- or 8-incher, bass or bluegill, where a 4- or 5-pound bass was feeding until you came

along? Even with careful and longish fly-rod casts, say 70-75 feet with a bug, fly, or streamer, those bass in shallow water are hard to come by. They are scary.

Away from the margins, fishing from a boat in 10 or 15 feet of water, you will find the bass easier to catch. They may be less willing to take a lure on the surface, but they will take boldly within a few feet of the boat, sometimes under it. I can't believe that anything other than water depth makes the difference. In the assurance of deep water they aren't scared, and therefore catchable.

Before I became so hopelessly hooked on trout fishing, I used to spend a great deal of time fishing for muskies in northwestern Pennsylvania; in LeBoeuf, French, and Conneaut Creeks and in Edinboro and LeBoeuf Lakes. Since that time Fish Commission initiative has distributed muskies to many other waters all over Pennsylvania.

Muskies are less predictable than bass; they are also more difficult to observe. One reason is that bass, undisturbed, seem willing to hunt and feed all during the day, even in bright sunlight and shallow water. Muskies rarely hunt and feed in that combination. In fact, although muskies in deep water may feed during the brightly sunlit hours, in shallow water they hardly ever do. And even when they do venture into shallow water in the half-light of early morning or late evening, they are extremely shy. That is true even of the little 15- or 20-inchers.

But in deep water, muskies sometimes do incredible things. One early afternoon two Erie fishermen, Jonathan Bright and Charley Cross, from a boat were fishing a long, placid stretch of Conneaut Creek. On a keep-alive stringer they had trailing in the water two smallmouth bass of about 2½ pounds each. Suddenly, a commotion at the stringer! Bright, looking over the side, saw a musky had seized one of the bass. Reacting more by instinct than design, Bright pulled the stringer into the boat, along with a 10- or 12-pound musky that hadn't scared soon enough.

In stream fishing for muskies, now and then I have seen a respectable fish hunting in the shallows at the head or tail of a pool — not so much seen the fish as the disturbance it made. Care-

fully, heart-in-mouth, I have laid a plug down near it. Invariably, with a sweep of the caudal, the fish made for deep water . . . scared, I'm sure.

Yet, and this has happened several times, fixing to fish a live sucker or chub from a boat, I have had a musky take it before I had payed out more than a yard or two of line. Obviously an unscared fish and a lucky fisherman — a happy combination, but don't count on it to produce fish.

Instead, count as more likely a scary fish and adjust your tactics accordingly.

What is true of muskies is generally true of pike, although I think pike are somewhat more bold. That is a general opinion among fishermen. One trait of pike contributing to that opinion is their tendency to lie in plain sight, often in relatively shallow water. However, their seeming boldness does not make them any easier to catch.

Walton, in Chapter Eight of the *Compleat Angler*, writes thus of the pike:

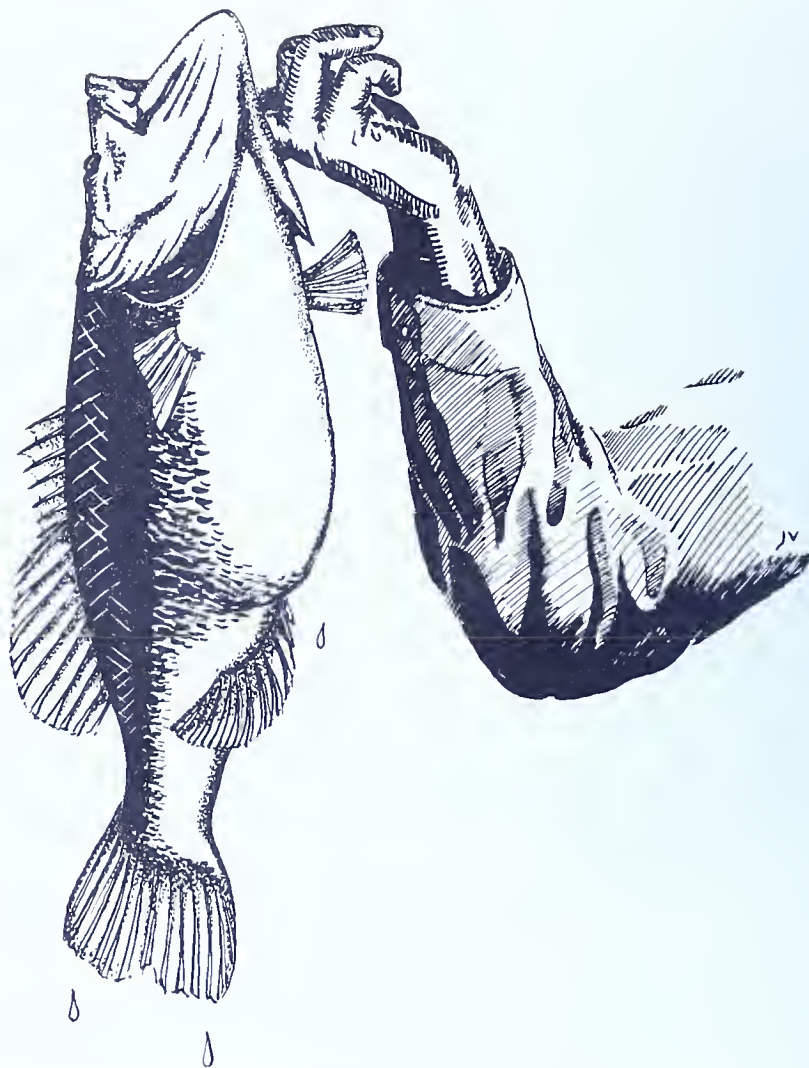
"...the tyrant of the Rivers, or the Fresh-Water-Wolf, by reason of his bold, greedy, devouring disposition; which is so keen, as Gesner relates, a man going to a pond, where it seems a Pike had devoured all the fish, to water his mule, had a Pike bit his mule by the lips; to which the Pike hung so fast, that the mule drew him out of the water, and by that accident the owner of the mule angled out the Pike."

So if you think incredible my account of a musky's being boated when it seized a bass on a stringer, I have good company.

Of another important gamefish of Pennsylvania, the walleye, I hesitate to express an opinion other than one: that of all our fish it is the best to eat. Except in Lake Erie, most of the walleyes I have caught in Pennsylvania waters were accidents, taken while I was fishing for muskies or bass.

Walleyes are supposed to be nocturnal feeders; the eye structure seems to confirm that supposition. So does common experience. Yet one of the most exciting sessions I have ever had was on a summer midday near Lowville on the west branch of the French Creek in Erie County.

I was readying to fish for muskies at the first big pool above the Route



"With bass, the scare factor is less obvious in its effect than it is with trout."

89 bridge. My second or third cast brought a walleye, a fish of two or three pounds. A few more casts I had another. Before an hour had passed I had half a dozen, the largest close to four pounds.

Where had they come from? It could not have been a fresh stocking; the state does not stock walleyes of the size I was catching that day. I never found out, and although I tried many times to repeat that experience, I never did — not in French Creek.

Probably because I did not understand fully how to fish for them, walleyes always seemed to me less interesting quarry than other species. Even carp are much cagier, fight harder when hooked, and represent more of a triumph when caught. Yet I have never seen in a friend's trophy room a mounted carp or carp head; bass, musky, trout, pike, and even a walleye, maybe, but never a carp. I wonder why. Of all our Pennsylvania fish, I rate the carp as scariest of all.

One day last summer, fishing for trout in the Waterside mill pond on Yellow Creek in Bedford County, I

came to a luxuriant growth of watercress, with water depth beneath, an ideal place for good trout. With utmost care I laid a deer hair Beetle alongside. The Beetle had no more than begun to float when a big carp of four or five pounds shot out, downstream and past me, toward deep water. I don't know why I didn't pick up my Beetle immediately, but I let it float on.

Not a foot past where the carp had emerged, a 13- or 14-inch brown trout took. Who says the scare factor does not pay off for fish! Not that the carp might have taken the Beetle, but if that trout had been as scary as the carp, I wouldn't be telling this story.

Walton speaks of the carp thus: *"The Carp is the Queen of Rivers: a stately, a good, and a very subtle fish. . . ."* Subtle? Scary!

Finally, if you are still reading, I'd like to say one thing — or say it again: if you want to add to your effectiveness as a fisherman, give your performance the benefit of an established principle of successful fishing: don't scare the fish you would like to catch.



Typical of so many of Pennsylvania's trout streams during the summer months, Clarks Creek's waters are low and clear.

CLARKS CREEK GYPSIES

by Gerald Almy

"The green inchworms were on about two weeks ago," the angler said as he peeled his waders off while perched on the tailgate of his wagon. "But I've been seeing a bigger worm here lately and the fish have been taking them well."

It was the kind of encouraging news one longs to hear when visiting a stream for only the second time, as I was, the recently opened "FISH-FOR-FUN" stretch on Clarks Creek. The identity of the larger "worm" I already suspected. Driving north through Dauphin County that morning thousands of skeletal deciduous trees stood gaunt and bare on the mountainsides, mere vestiges of their former beauty. Such widespread destruction could only be the work of one insect — *Porthetria dispar*, the infamous gypsy moth.

From the parking lot I hiked down to the stream with mixed emotions sparring in my head — concern for the extensive destruction this alien pest was working on the once-green forests, and anticipation at a new an-

gling horizon opening up.

Clarks is a classic freestone stream, alternately lurching and plodding through rich stands of elm, evergreens, birch and maple. Two miles are classed as "FISH-FOR-FUN" waters and only a single fish over 20 inches may be creel each day. There are turkey and grouse in the woods and the waters host excellent aquatic insect populations.

But at the stream my suspicions were confirmed — today a terrestrial insect from France constituted the sole item on the menu for the trout. Several fish were visible as I approached the first pool — still low and thin from the dearth of spring rains. With a brisk rise a brook trout snatched a morsel from the surface.

It was the gypsy moth. They were present everywhere on the shoreline foliage, ravaging the elms, the maples and even the dark hemlocks bordering the stream. But it was the tender green leaves of the birch that were infested most heavily by the legions of rapacious caterpillars.

Looked at singly, from a purely aesthetic viewpoint, the gypsy moth larva is a rather handsome creature. Brown hairs (settae) cover its sooty grey body. Rows of bright blue and red tubercles decorate the back of the insect, making a rather exquisite critter.

But, seen in numberless hordes as they systematically ravage the trees in a forest, the insects are sickening.

The gypsy moth is not native to this country. It was introduced accidentally by a French scientist who brought a number of egg clusters to Medford, Massachusetts in 1869, with hopes of crossing the species with the silkworm. Eggs were spilled and soon larvae were roaming loose. The moths multiplied and over ensuing decades spread rapidly throughout the northeast, since few of the insects' natural enemies were present in this country to keep their numbers in check.

Today the gypsy moth is found as far west as Minnesota, south to Texas, and along most of the Appala-

chian Range. The insects attack virtually all trees, with oak, poplar and birch special favorites. Young larvae feed mainly on deciduous trees, but full-grown specimens, which measure up to two inches, also attack conifers.

Up to 400 eggs are laid on the trunks of trees by a single female moth. In May the eggs hatch and caterpillars feed on plants for about a month and a half. Pupation occurs during July and in August adult moths appear.

Clarks Creek isn't the only stream that sees heavy infestations of gypsy moths. Dave Johnson, who hails from the trout-rich country near Lewisburg, says that "for the last couple of years our area has been plagued by an invasion of gypsy moths. The larvae this past summer had to be, in many spots, the most abundant terrestrial I've ever witnessed. From late May into July

they're really sickening and are certainly taken by the trout."

But it was on Clarks that I first encountered *Porthetria* on that bright June day. It was noon when I saw the brookie stab the caterpillar with a savage lunge, beating out two browns to the free-floating meal.

Nervously I knotted a clipped deer hair inchworm to the 6X tippet and worked line out with the slender rod. The fly fell with a splat behind a brown trout. Swirling, the fish sped to the noise . . . after a second's hesitation, he took hard.

I pulled back and the trout responded with a thrashing fight in the shallow water. Releasing the brown, I cast again and took two brookies and another brown before moving up to the next glide. Here a rainbow and another pair of browns came to the fly in short order.

The trout were ravenous, and the

gypsy moth was the sole object of their gluttony. Swift breezes buffeting from the northwest brought the succulent bounty to the trout with regularity and the fishing maintained a high pitch of intensity throughout the entire afternoon.

The challenge might well have worn thin early in the day had not there been some skill required in the delivery of the offerings. As in many terrestrial feeding situations, the trout used their sensitivity to sound as a primary feeding key. It was the gentle plop of the insects tumbling into the water that alerted them to the presence of a free meal. Indeed, some larvae which fell in the water out of hearing range and drifted sedately in the current were ignored entirely by the trout.

Taking my clue from this behavior, I cast the imitation caterpillar with a soft splat to draw the interest of the

Reacting to the heavy infestation, a Clarks Creek brook trout comes to net, an imitation gypsy moth embedded in its lip.



*The culprits! The infamous
Gypsy Moth larvae ravaging the
Clarks Creek foliage.*

fish. But casts could not be plopped just anywhere to elicit a strike. Those delivered in front of the fish were often rejected. Those too far behind the trout were completely ignored. It was the fly dropped with a *gentle* splat six to 12 inches behind or slightly to the side of the fish that brought confident takes.

Pitching the bulky deer hair imitation with this precision put some challenge into the fishing and made for a day of angling anyone would be glad to experience. From noon till five p.m., 44 trout were caught and released into the currents of Clarks Creek.

Imitations of the gypsy moth need not be intricately realistic. The major requirement is a fly of the appropriate size and shape — and one that floats. Since the larvae along a given stretch of water may vary from one to two inches in length, size is seldom a precise factor. In most cases color doesn't loom too importantly either, though it's best to use flies tied in the sooty grey hue of the naturals.

My favorite pattern for most gypsy moth fishing is a simple fly constructed of deer hair spun on a No. 8 2X long hook (Mustad No. 94831) and trimmed to mimic the robust, cylindrical shape of the natural larva.

Another caterpillar can be made by tying a dry version of the woolly worm. Dub a thick rabbit fur body on a No. 8 2X long hook after fastening a dry fly hackle in by the butt, just in front of the bend of the hook. Next, palmer the hackle over the fur body to the eye of the hook and tie off. Clip excess hackle tip, whip finish, and trim a "V" wedge from the bottom of the fly. Dressed with a good floatant, this makes a pattern that is especially useful when trout are skittish and the flop of the deer hair larva alarms, rather than excites them.

In many ways the gypsy moth parallels the Japanese beetle. It is a pest of plant life that causes considerable economic damage and aesthetic depredation. *But* — as long as the insects are present along trout waters, the angler has a new and promising fishing opportunity at hand that should not be overlooked.



*The author's favorite imitation
of the gypsy moth, top, is
constructed of deer hair spun on
a 2X long hook and clipped
to shape. Another useful larva
imitation is the dry fly
version of a woolly worm, bottom.*





Old "Slab Sides" is kid stuff

*(but that doesn't keep
the grownups away!)*

by Sam Hossler

Who has more fun fishing than kids? And, what could be more fun to fish for, or more cooperative, than the crappie? Although spring or early summer is usually thought of as crappie time, even in mid and late summer these scrappy little fellows will provide some mighty fine entertainment and eating too!

In the spring, large schools of these calico-marked panfish migrate to the shallow sections of the lakes to spawn and with this migration, fisherman collect in great fleets to take advantage of these concentrations. At any known crappie lake it is not unusual to see clusters of boats anchored around favorite hot spots in the spring. These armadas will stretch as far as you can see with stringers and live baskets hanging over the side on every boat.

Most lakes and ponds have good populations of panfish and in many cases overpopulations which will readily strike flies, poppers, spinners, jigs or live bait. Probably the one bait that accounts for more crappies in the pan than any other is the live minnow. A favorite natural food, the minnow can bring results when everything else fails. As the water warms up, the schools move to the cooler, shadier spots in the lakes, so look for them in the deeper holes, preferably holes that contain bottom structure, such as sunken trees or brush. The brush provides protection and cover for the minnows and they, in turn, provide dinner for the crappie. What more

Now that's a nice stringer of crappies in anyone's book!



When viewed "on edge," Harry Richards' crappie is but a sliver of silver; but, still fun on ultralight tackle.

ould you ask?

It may cost you some tackle when you get hung up on these obstructions but it's well worth the effort and small cost to provide a fine fish fry for the family.

The kids can dunk worms or try to notice a strike with live minnows. But, if they are at all proficient with a spinning rod, let them try some tiny spinners and jigs.

This past June, my son, Scott, and a fellow fisherman, Mark D'Angelo, caught "slab sides" all day long at Canadohta Lake, in Crawford County, Pennsylvania. They had located an area that must have contained thousands of these little fighters and before it was over, they had put quite a dent in the population. These fish have a very thin membrane around the mouth and are known

many places as "paper lips." Due to this characteristic, it requires extreme caution when hooking and playing the fish. Small hooks and a delicate touch are mandatory. Just because they may be abundant, doesn't mean you can fill your stringer by "horsing" them in.

The crappie is an extremely prolific fish and the possibility of fishing them out of a lake, is next to impossible. In fact, if a great number of them aren't harvested each year, they will overpopulate the lake and the result is small stunted fish. This is one reason the Pennsylvania Fish Commission has the generous limit of 50 placed on them.

The boys were using a little black-headed jig, with a fluorescent, two-inch plastic worm trailing when they were doing all the catching at

Canadohta. At the end of the day, that poor worm was a complete shambles. I also found the little safety pin spinner, with yellow or red plastic grubs, very effective. For tackle, my personal preference is a ultralight, flea rod and two- or four-pound-test mono. Even with the smallest of fish, you get a fight with this combination that puts any trout to shame.

If the crappies aren't hitting there is always an abundance of bluegills and other sunfish and, again, on light equipment, they will give you a tussle worthy of anything three times their size and I can't think of a lake or pond that doesn't have more than enough of these colorful little fellows to go around.

Take the kids fishing and while you're there, try it yourself. It's great fun.

The author with a stringer of bragging-size crappies. "Fishing for keeps" is good for any crappie population.



Bureau of Waterways Director Retires—



Captain Charles E. Leising, USCG (Ret), Director of the Fish Commission's Bureau of Waterways announced his retirement, effective July 7th.

Captain Leising was employed by the Commission in January 1969 after 30 years of service in the United States Coast Guard. Born in Lorain, Ohio, Leising graduated from the US Coast Guard Academy in 1938 and earned his Master of Science Degree in Naval Architecture and Marine Engineering from the Massachusetts Institute of Technology in 1946.

During his tenure in the Coast Guard Captain Leising served both ashore and afloat in the Atlantic, Pacific, Gulf of Mexico and the Great Lakes. In addition to various theater campaign medals for WW II and the Korean War, he holds the Coast Guard Commendation medal for leadership. He is a member of the American Society of Naval Engineers and the American Boat & Yacht Council.

Pennsylvania's Boating Safety Programs have undergone sweeping changes under Captain Leising's direction. A firm believer that the key

to Boating Safety lies in education, Pennsylvania has consistently led the nation in educational programs. In addition to the Fish Commission's six-hour basic boating course, every registered boat owner in the Commonwealth has received a comprehensive self-teaching correspondence course.

Under Captain Leising's direction, the Bureau of Waterways has laid the groundwork for an extensive public school program, featuring "hands-on" training using small craft in swimming pools. Noting the changing trends in recreation and the unique features of Pennsylvania's waterways with over 4,000 miles of navigable rivers and streams, Pennsylvania has assumed a leadership role in establishing river safety education and training programs.

During Captain Leising's tenure with the Commission, Pennsylvania's Boating programs, previously spread over three agencies, have all come under the purview of the Fish Commission, the latest of which was the incorporation of the boat registration function in January, 1978.

Under the Bureau of Waterways, Pennsylvania maintains a field force of more than 80 highly trained Waterways Patrolmen and Supervisors and more than 600 deputies who operate a fleet of 145 watercraft.

Captain Leising and his wife, Helen, currently reside in a restored miller's house along the Yellow Breeches Creek in Boiling Spring, Pennsylvania.

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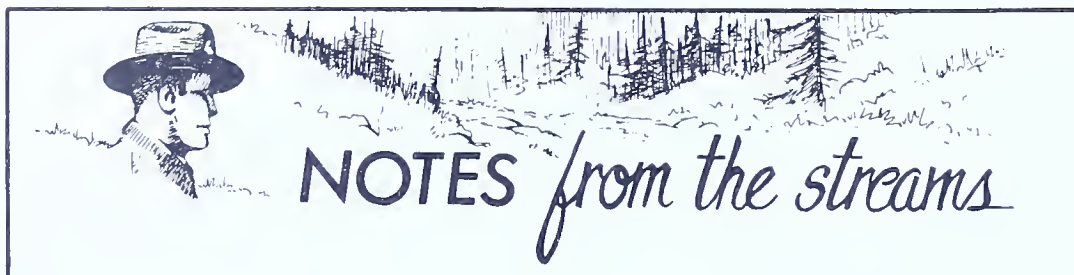
George Ferguson, right in the photo above, caught that giant 51-inch musky in Pymatuning Lake. The 49 lb. 7 oz. 'unker fell for a night crawler on 10-pound-test line!



Edward Whitman, above, caught the heaviest shad on record from the Delaware River: 26½" 9¼ lbs. — 1¼ pounds heavier, 2" shorter than the state record caught in 1965.

Fifteen-year-old Charles A. Nixon, below, caught his 30" 14½ pound carp in Greene County's Ten Mile Creek.





BASS-BY-THE-INCHES —

The C. W. Young family of Finleyville owns a cottage on Canadohta Lake, Crawford County, and have enjoyed a good summer of bass fishing. The entire family has kept a record of all bass caught — *in inches and feet!* A total of 73' 9" of bass were caught throughout the summer and two muskies for a 6' total. Bass ranged in size from 9½ to 16½ inches. Not bad for a lake that's not supposed to support many bass.

William Mantzel
Waterways Patrolman
E/Crawford County

GOOD BOYS!

I don't know how many times over the years that I have arrested a fisherman who would tell me "This is the last fishing license I will buy in Pennsylvania . . . from now on I am going to fish in New York State!" April 1st, was the opening day of the New York season and while on patrol of several stream in Pike County, I have to go into New York to get there. I happened to see a New York Conservation Officer checking fishermen at one of their famous streams so I stopped and talked with him for a while. He mentioned to me that he had never arrested a fisherman from Pennsylvania in his nine years in that area. They must have gotten religion in Pennsylvania!

Joseph E. Bartley
Waterways Patrolman
Pike County

EXPO '78

At the '78 Fishing and Boating Expo which was held at the Northeast's Wyoming Valley Mall we had, among the many displays, some portable fish tanks with various species of fish on display for the viewing public. During the course of the four-day show we had a breakdown on one of the exhibits and had to remove the fish from the tank because of the lack of a circulating pump. Someone jokingly made a sign which read, "*See The Rare Invisible Fish*" and displayed it on the fishless tank. All one had to do to go into laughing

hysterics was to stand nearby and watch the various reactions — which included one young man telling his buddy he was a liar when the buddy insisted he could see the "Invisible Fish" swimming in the tank!

At another exhibit we had three faucets mounted on a facsimile of a wall from which three different types of water were constantly flowing. Over each faucet was a color photo of an environmental situation which indicated the cause for the three separate water conditions: red water coming from an acid strip mine; black water from a factory discharge and, last but not least, clear water from a clean stream. The theme of the exhibit being what caused polluted water and where our pure water came from. Each faucet was independently contained and actuated from its own small reservoir of water which recirculated about two quarts of the fluid from within the fake wall.

I watched one elderly gentleman who had been watching the water flow for almost thirty minutes, during which time he was constantly giving me the "fish eye," along with the exhibit. Finally, he spoke up and said to me, "You guys call yourselves *conservationists!* Just look at all of the water you are waisting here." All of this time he had an empty waxed Coke container in his hand. He then stepped up the exhibit and placed his finger under the running water which was coming from the clear tap and remarked, "I have been waiting here for almost an hour for a drink and that darned water is still warm." When he walked away, I heard him muttering, loud enough for me to hear, "If I ran the water that long at home, it would get ice cold!" I figure that here is one man who knows when water is wasted, even without polluting it.

Claude M. Neifert
Waterways Patrolman
N/Luzerne County

ROAD KILL

During my ten years on the job, I have received many phone calls joking about a road-killed trout. While doing the pre-season stocking at Raccoon State Park Lake it actually happened. An energetic trout jumped out of the bucket onto the

roadway and a passing car flattened it. I asked, "Who did it? We'll get him for taking trout in a closed season." An onlooker said, "I don't know! It was a hit and run!" To this I replied, "Oh! We'll get him for an illegal device, too!"

Donald F. Parrish
Waterways Patrolman
Beaver County

NO LICENSE INCREASE

In talking with some of the fishermen up this way, I was surprised to learn that many of them thought that a license increase was to take effect in 1978. I had to explain that the price is the same as last year and was still the best bargain in the Keystone State.

Bernie Ambrose
Waterways Patrolman
Elk County

PAN-SIZED PANFISH —

Fishing at Commission-owned Opossum Lake in Cumberland County was outstanding during the year 1977. I observed many fine catches of crappies. However, Mr. Joseph Martin, of Newville, landed this giant crappie which was 17½ inches long and weighed 2 pounds 15 ounces. In addition, just one week later Joe caught another stringer of crappies. He had five crappies which weighed a total of eleven pounds. Nice catch!

Perry D. Heath
Waterways Patrolman
Cumberland County



FROM THE CLASSROOM —

Last fall I visited the Clarion Area Elementary School and, utilizing a Black Rat Snake, put on a reptile program for Mrs. Walters' 5th Grade Class. The childrer were very attentive and had many questions concerning snakes and why they

were so necessary to our environment.

Many of them had some second thoughts about touching or handling a snake but upon seeing me put a five-foot black snake in my shirt or around my neck they really got over some of their fears. Here are brief excerpts from some of the comments I received in their letters:

Dear Mr. Cortez:

"Thank you very much for the nice demonstration. I learned alot from it. It was nice of you to take time out to tell us about snakes. I was a little bit scared about snakes but now I'm not."

Patty Rupert

"I liked that snake you brought in. I enjoyed what you told us about snakes. Now I can tell which snakes are poisonous and nonpoisonous. I hope you and your snake can come again. Thank you for coming."

Dianna L.

"... I learned so many things I couldn't count them all. Your snake was really cute and she was very smart. I thought it was funny when you told us about your hat moving on the seat."

Laurie Wilson

"... Even now I am afraid of snakes but still like black snakes. I think the black snake was neat."

Brad Kiser

"I think it was nice of you to bring a snake to our room. Would you ever put a poisonous snake in your shirt? I'm not sure if I'm still scared of snakes or not. Well, it was very nice of you anyhow."

Leza Ortiz

"Thank you for showing us how to handle a snake and how to not panic when you see a snake."

Matt Lerch

"Thank you for sharing the hour with us about snakes. I really enjoyed it. I like your pet snake, Lucy. I wish I had a snake but I'm not allowed to because my mother doesn't like them."

Beth Alberta

"I enjoyed every minute while you were here. I always wanted to have a pet snake of some kind and you made me want to have one more. You helped me learn more about snakes than I ever knew. I am the red-headed kid in the back, the third row from the left. Thank you very, very much."

Derek Fague

Robert J. Cortez
Waterways Patrolman
Clarion County

RARE

Sometimes a person loses sight of the simple everyday things in life that he comes across. While checking two fishermen from New York who were fishing in Shohola Falls Dam, I observed a large otter swimming about 40 feet away and pointed out to the fishermen. After explaining to them that most people never even get to see one of them in the wild, let alone see one so close, the younger of the two asked me if this otter was some kind of endangered bird.

Joseph E. Bartley
Waterways Patrolman
Pike County

"NEW" WATER —

In April of 1978, the Fish Commission stocked Bell's Gap Run located near Bellwood in Blair County for the first time since 1961 or 1962. The stream had been stocked annually for years. However, a mine acid drainage problem in the early 60's caused the stream to be removed from the stocking list. As you might well imagine the excitement in the Bellwood area was quite high. On the opening day of trout season, Deputy Game Protector Dale Stehley and Deputy Game Protector Jack Stewart checked the area for me in the morning. When I ran into the two deputies around noon they reported that there had been a real good turnout of fishermen on the stream and that a good number of trout had been caught.

Later in the afternoon I finally made it to Bell's Gap Run. I was pleased to see that there were still a good number of fishermen out. I was, however, very sur-

prised when I checked a young lady from Quebec who had just finished fishing in Bell's Gap. The stocking of Bell's Gap Run is certainly another plus for Pennsylvania's pollution abatement program. A lot of credit for the success of the cleanup of Bell's Gap must go to the Bellwood Sportsmen's Club and the Blair County Chapter of Trout Unlimited.

Walter A. Rosser
Waterways Patrolman
Blair County

CLEANUP CREW —

The weekend before trout season I was patrolling Marsh Creek and saw several persons with large bags picking up litter along the creek. Upon talking with these people I found that their pickup truck was almost totally full of litter. They had been going from one place to another on creeks throughout the county, picking up litter. I found out these men then place trash cans along the stream and when the cans are full come back and empty the cans — on their own! They have undertaken this program on their own to make a worthwhile contribution to conservation. I would like to take this time to personally thank Ronald Beeler and John P. Hertz, both of Gettysburg, for their own personal contribution to help keep Pennsylvania streams beautiful and scenic.

They will not have as much time to fish since they have started this program, but it could be the start of something wonderful.

Warren W. Singer, Jr.
Waterways Patrolman
Adams & N/York Counties

Veteran Officer Passes Away —



In Memoriam
Lloyd Wilson 1917-1977

The Pennsylvania Fish Commission notes with sadness the passing of Lloyd Wilson, Waterways Patrolman assigned to Clinton County in 1953 where he served until his death on December 16, 1977. Lloyd Wilson served in the European, African and Middle Eastern Campaigns during WW II and was the recipient of the Purple Heart Medal.



On a calm "sea," reaching home port if it's on the opposite side of the river . . . the lake, presents no great challenge. But, should the weather change, be prepared! It's a long, much more hazardous ride.

Ashore & Afloat

by Gene Winters

An ill wind can blow at any time. Landlubbers and skippers alike are, however, advised to keep an extra careful watch during the months of August. It is often this month, above all others, that brings the towering thunderheads and massive squall lines in greatest number and fiercest strength. Those who venture forth upon the water will inevitably meet a bad weather system sooner or later that will test the design of the craft, her gear and organization, and the skipper and crew. It is, of course, these turbulent conditions — not the clear, sunny days — that leave the most lasting impressions, where every minute detail is etched indelibly in the mind.

Those who have ever been "caught out" at sea and survived often forget

or overlook the fact that inexperience or inaptitude may not only have contributed to their harrowing experience, but may have even *created conditions more damaging than the weather itself*. Some allowance must also be made upon hearing a tale of a "close one" at sea for imagination to mentally create, perhaps, after-the-fact conditions worse than actually encountered.

Bad weather should only exist for a vessel too far offshore to run back to the shelter of land. While lake and river boaters argue that the coastal navigator has weather radio, electronics of all kind and other navigational aids to assist him, there is seldom a small craft operator in small water who has any excuse for being caught by weather. The skipper's watchful eye and common sense should, except in most unusual circumstances, be the real tool to safety.

Safety of the vessel and crew must always be the skipper's first consideration. Naturally, the survival of the crew takes precedence. But often the two are inextricably entwined. Loss of a person overboard — by far the most feared if not the most probable danger in a storm — has, since man first ventured forth on the water, seen a steady toll of life taken from this cause. Once a man is separated from his boat, his chance of survival is

greatly reduced, to say nothing of a crew thrown into panic and seriously weakened by his absence.

Unnecessary damage to the craft and equipment may occur due to the strength of the wind, the violence of the boat's motion — even the sheer weight of the water itself. Damage may be to the hull, decking, steering electronics and navigational aids . . . indeed, the very structure of the vessel itself. Gear left improperly secured, especially heavy anchors, tackle boxes, cooler chests, etc. may become, literally, flying missiles. Crew members may be injured or even killed.

Up to certain limits this condition can be eliminated or avoided by equipment that is properly maintained and securely rigged or safely stowed. Although it is possible to reach stresses and strains greater than the gear or even the vessel can withstand, this should not really be a factor in small boat operation. Especially with a reasonably competent skipper who has thoughtfully ensured that all equipment is of proper size and weight for all conditions likely to be encountered and provided he has the presence of mind to keep a wary eye on the weather and know when to head back in.

The greatest danger is usually not from the weather itself but rather from a series of events it triggers.

Grappling with a runaway sail, an inadequate anchor, a struggle for hours with a cracked oar that leaves the crew so weak and exhausted that all will for survival is lost.

Overwhelming of the ship by the violence of waves breaking over her and damaging her hull is, of course, a possibility with any size vessel. Witness the recent supertanker incidents. Yet, if you "listen" closely, it is, more often than not, failure of *men* — not *machinery* — that caused the end result. Situations developed that should have been eliminated or at least controlled by the actual handling of the boat, mentally as well as physically.

Danger to crew, equipment and vessel is most often proportional to the speed of the vessel in bad water. More boats and crew are lost in the run back to safety than at the expense of the weather itself. If a boat cannot safely make it to the sanctuary of land, it is often better to "sit it out." If a boat is stationary, or at anchor, there is very little actual danger of devastating damage, even under quite severe blows, short of weather causing waves and wave tops to break above the craft's freeboard. Normally, in a vessel of any size worthy of being called a boat, these conditions are seldom encountered by a small water boater. In an open sea it usually requires at least gale force winds to encounter such conditions. On

sheltered, shallow water, or inland waters, such conditions are unlikely to exist, also. Instead, conditions may be encountered that *seem* worse and are, perhaps, worse than breaking waves. Wind and high water current from opposing directions is such an example.

Running full throttle into a violently churning sea, a vessel can pound violently, often plowing her nose into the waves, then rising with decks awash. While dramatic and adventuresome in a sea epic film, in real life such circumstances often court disaster. It is here, too, where often unseen and unheard, minor structural damage begins to occur. Even wave-riding, seemingly the thing to do, is fraught with dangers. Though spray may be flying apparently harmlessly by the sides, there may be no advance warning of pitchpolling, pooping, or broaching. In shallow waters, wave-riding is usually not even an option, however, as the chop is too short and close and the waves too small. (Even in the ocean, wave-riding is difficult . . . few boats and operators are able to keep up with a 25-knot wave crest for the time necessary.)

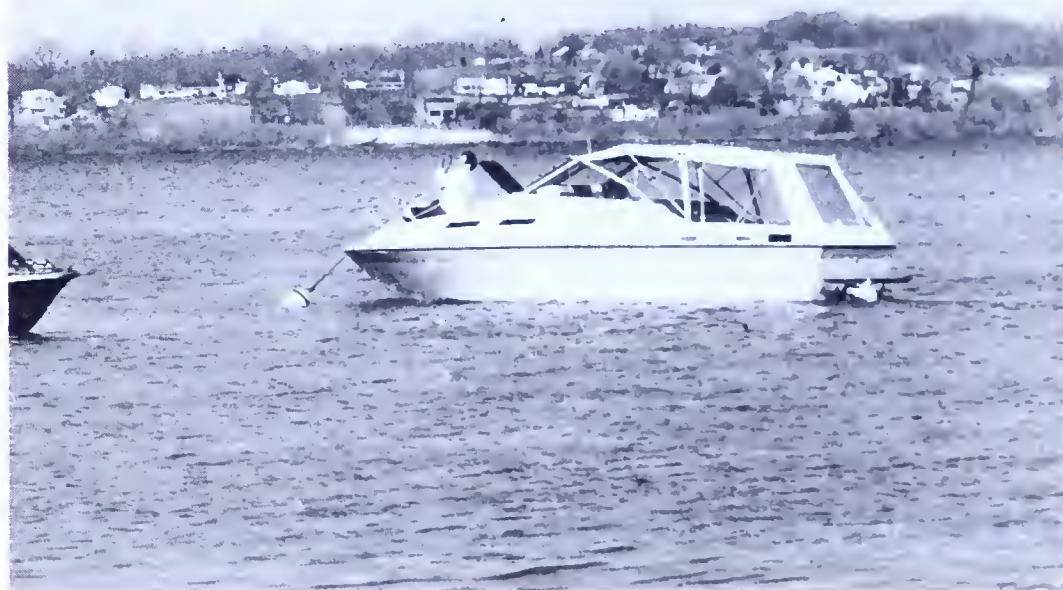
Lying at anchor or heaving to are simply alternate methods of letting a vessel look after herself. She will normally be capable of maintaining relative safety for herself and crew unless an unusually heavy strain is put on her gear, which shouldn't happen if properly outfitted in the first place, or

the breaking waves become too high. Often, reducing speed or lying at anchor may actually *increase discomfort* for the crew but it's a small price to pay for *increased safety*. Rather a rocking and rolling hull motion than a disintegrating vessel; rather a face full of sea spray than a head lost forever under the water.

Procedures for handling a vessel in such encounters is, admittedly, not entirely simple. In spite of the best-intentioned advice, for example, about throwing out a sea anchor in the most likely conditions encountered, a sea anchor by itself will be of little value. In spite of all that has been written and said, a sea anchor will simply not keep a vessel of any size, especially a sailboat, headed into the wind. Even with a boat with a natural (unlikely) tendency to keep her bow into the wind, a sea anchor may have other disadvantages. For example, it may allow a severe strain to be placed on the rudder, unnoticed while the stern is being thrown around in the pounding chop.

Like so many aspects of boating, bad weather piloting takes training and schooling, reading and studying — yes, even *experience*. But *learned* it must be, and, the sooner the better. Sooner or later, an ill wind is bound to blow. Tomorrow or the day after, your life and that of your crew may rest on what you've learned in the past.

This boat will soon be secure. But how secure is the mooring? At today's prices, it makes good sense to go a step beyond what might be merely "adequate" and provide for your craft's all-weather safety.



THE ANGLER'S NOTEBOOK

by Richard F. Williamson

FISH FACT: With eyes on both sides of its head, a fish can see to the right and to the left at the same time. It can also focus both eyes on an object directly in front of it—the blind spot of a fish is behind or below it.



Keep a tight line on a fish hooked with a spoon but just tight enough to maintain pressure on the fish. The fish may be lightly hooked in the lip, and, if the line is allowed to go slack, the fish can shake the lure loose quite easily. If too much pressure is applied, the hook can tear out.

Cigar-shaped surface plugs with spinners at front and rear, reeled slowly atop the water around lily pads and along the edges of weed beds, will catch bass, pickerel and northern pike.

Be careful in the approach to a fishing area that contains stumps and fallen tree limbs. Don't carelessly bump a boat or canoe into them, for the bumps will send vibrations through the water that will alert the fish to approaching danger.

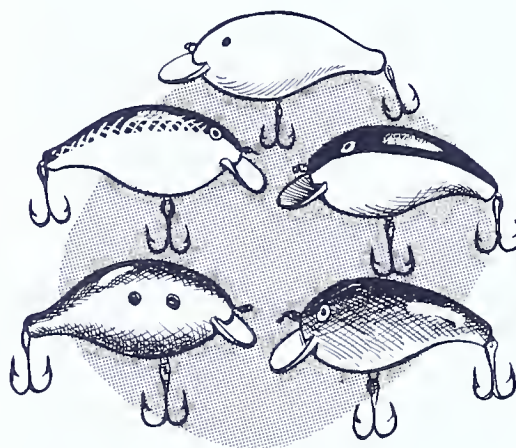
King-sized motors are not usually necessary on fishing boats. They are alright to go quickly from one spot to another, but the chap with a small motor or who uses oars or a paddle has more time to examine the water and pick out the hot spots.

Many different actions can be given to a spinner. The angler can make it start and stop, twist and turn, wobble and dart about in the water, and a stream current itself will impart erratic action to the lure. Simply casting out and reeling straight in is not the most effective way to fish a spinner.

Mind-boggling is the chore of choosing among the colors of plastic worms, even though black and purple are the most popular shades. One chart lists 13 colors, from white to flame orange. Another offers bodies of one color and tails of another: for example, black with a "hot pink" tail, purple with chartreuse tail, and brown with flame orange tail. Stick with the basic colors, but it could be fun to experiment with the more exotic shades.

Figures in line weight tags (DT6F for example) indicate the line weight. The rate numerals run from 3 to 12, based on the weight of the first 30 feet of the line. The higher the number, the heavier the line.

It will do no good to release a fish that has bleeding or torn gills. The injury itself may not be fatal but a deadly fungus is almost certain to develop on the injured flesh.



Crank baits are a popular plug style. They are intended to be cast and retrieved at various depths and speeds. Short and rather fat in shape, most are made of plastic, but balsa wood lures also are available.

Take your reel along when you buy a new fly rod. Be sure the reel fits securely in the reel seat on the grip of the rod.

Don't expect to fish all the time with the same split shot to get the lure or bait down to the fish. Deep water and fast currents demand more weight; shallow water and slow currents require less. Use just enough split shot so that it travels over bottom with light taps. Too much split shot will hang up the lure or bait.

Walleyes live in deep water during the hot days of summer. They school in the deepest water they can find, going down 30 feet or more if the weather is unusually hot. Not until the cooler days of autumn will they spend much time in shallower water.

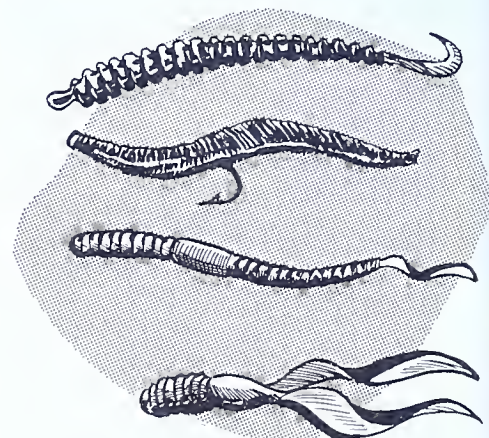
Hooks of heavy wire are best for bait fishing. They will hold the bait better and hook the fish more securely than hooks of light wire.

Streamer fishing for bass in rivers and large creeks calls for a special tactic. Because of the currents in such streams bass hold near the bottom, as well as around obstructions that break the flow of the water. To get to them, the streamer should be fished deep in the water, often just off the bottom.

If no insects are hatching to guide you, remember that at this season of the year the naturals are of the lightest colors. Try such patterns as the Light Cahill, the Cream Variant, the Pale Watery Dun, and bivisibles and spiders in light ginger, cream, pale yellow, and even white.

Large yellow or orange poppers are good lures for pickerel which are normally considered underwater feeders.

Original plastic worms were made to imitate night crawlers but many new and novel shapes are now used and some imitate a leech rather than a worm. Fluttering tails are the most prominent feature. The latest is a ribbed worm (top) that has a lot of action and also traps and releases bubbles of air in its segments.



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fishing . . . the contemplative sport

PENNSYLVANIA

SEPTEMBER—1978

Angler

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FAR OUT —

Let's get down to earth!

A recent programming of the "60 Minutes" television series featured a scientist espousing his plans (which he hopes to sell to NASA) for super satellites to be placed in earth's orbit by 1985. Although we can still remember the dreams and visions we enjoyed in boyhood, spurred by "Buck

Rogers in the 25th Century," we're brought up short by the prediction that in less than seven years we could (and should) have satellites in space housing not just a dozen people, but 1,000 . . . eventually 10,000, ad infinitum. The professor even has some backing and is currently pushing his dreams on NASA's planning staff. These super satellites could, he says, have their own housing developments, their own climates, their own length of day—whatever the people want.

After recovering from the realization that this man is deadly serious and that he has some support from "credible" scientists, we can, for the moment, enjoy the frill of picking out who the first people consigned to this lovely life should be. Surely you have your nominees and I hope that they would include all the slob anglers and hunters; and, certainly not the least nomizable, practically anybody who disagrees with us! What a bright spot for: lobbyists for dredging, moratoriums on environmental regulations, the stem-to-stern "stream straightener-outers," and all those who stand in the way of the objectives that we ourselves had picked.

On the other hand, isn't it rather disgusting that people are seriously thinking about such a travesty when there are so many difficulties facing us in managing our own Planet Earth? If that isn't bad enough, come closer to home and realize that we have not yet come to implementation of the Federal Surface Mining Act of 1976; we have no national energy package and it looks like a long hard road before we do. Coming even closer to home, Pennsylvania Government sets a low priority on a good environment (vis-a-vis the Department of Environmental Resources' budget of less than 1 ½% of the total General Budget); examine, if you will, the difficulty in just raising enough money to keep Fish Commission programs going the same as they are, but with more enlightened guidelines.

Frankly, we hope that the professor and his outlandish proposals will suffer from the spinoffs of Proposition 13 and, beyond that, we hope that the people of the United States who have repeatedly shown an overwhelming support for enhanced environmental quality will speak up in meaningful ways — be heard — then be served. This good earth is worth saving; and, when madcap scientists have lost the ability to provide for the intelligent application of their technologies, then I think it's time to take a whole new outlook on our present life and where we hope to go from here.

Ralph W. Abele,
Executive Director

Pennsylvania Angler

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FRONT COVER

These anglers appear to have most of the Juniata River to themselves
and, in fact, that might just be the case. After Labor Day
all too many anglers call it quits — just when fishing's at its best.
Photo by Russell Gettig, Staff Photographer.

BACK COVER

The "backwaters" of Lake Erie's Presque Isle Bay proved too tempting
for angler Nick Sisley, so he took to the waders. Here, You
can expect almost anything: muskies, pike, bass and all the panfish.

MONTHLY COLUMNS

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James F. Yoder, Editor

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LOOKING FORWARD ...

Enclosed you will find a check for three more years of your magazine. I recently moved to New Orleans, Louisiana — the state they call “Fisherman’s Paradise.” Although there is excellent fishing here, I miss the beauty of the Pennsylvania hills that surround the Susquehanna River and Maiden Creek — the two Pennsylvania waterways which at times in my life were “just out the back door.” Keep up your fine work and keep that magazine coming — I’ll need those tips when I return home.

BOB GOOD
New Orleans, Louisiana

“LEFT HANGING”

I’m a member of BASS and I read something in the March/April edition under editor’s comments that really interested me. *Bassmaster* magazine claims only seven states, of which Pennsylvania is one, having closed bass seasons. They also said that “In only four states is the purpose of the regulation to protect spawning bass.” Pennsylvania was not one of the four states.

The statement has left me hanging since they state Pennsylvania has a closed season but it is not to protect spawning bass. Could you please tell me why we have a closed season on bass?

Bassmaster also mentioned that Pennsylvania biologists are considering more liberal bass season regulations. Could you please comment on this.

JACK PERRY
Doylestown

Dear Mr. Perry:

Your recent questions regarding Pennsylvania’s bass seasons have been referred to me for response. I haven’t had the opportunity to read the March/April issue of *Bassmaster* so I’m not sure of the context in which Pennsylvania’s bass season was mentioned. In any event, Pennsylvania does have a closed season on bass. I believe the original intent of this season was to protect spawning bass. Unfortunately, for this theory, our smallmouth are often still

spawning when bass season opens.

The only reason we still have a bass season is because we aren’t sure what is the best alternative to having a closed season. Pennsylvania bass don’t grow as rapidly as those in Montgomery, Alabama, or Orlando, Florida; therefore, a bass that’s just average in the South is a darn nice fish in Pennsylvania. Many of our staff feel bass are particularly vulnerable to angling in the spring/early summer period and that a disproportionate number of bigger fish would be harvested, thus diminishing the “quality” of our bass populations in rather short order.

We are considering alternatives which might permit angling, some harvest and still be restrictive enough to avoid overharvest during a period of extreme vulnerability. One of these “more liberal” bass season regulations which has received serious staff consideration would be: no closed season; but, during the period from mid-March to mid-June the creel limit would be reduced to two bass per day and the minimum size limit would be high, perhaps 16 inches. It’s too soon to say what, if any, changes in regulations will be ultimately be enacted.

We’re not even going to formally suggest anything for Commission action until we’re a few years into a resource inventory (perhaps for 1980 or 1981). Until then, we will continue to have a season if for no other reason than because we haven’t yet collected the necessary facts to justify a change. Tradition dies hard and I’m guessing that any change would generate opposition. I want a well-founded basis with which to counter that opposition. You may find that a bit hard to believe, but — honestly — there are still a few traditionalists out there in the bushes who can, straight-faced and seriously, suggest we ought to go back to the old July 1 opening and stock more fingerlings!

Sincerely yours,
Delano R. Graff, Chief
Division of Fisheries

WHY THROWAWAYS?

Last Saturday, I took a preseason hike along Hay and Manatawny Creeks in Berks County. Both streams had been stocked with thousands of trout by then and it was fun to imagine how I’d approach the various pools and riffles and which flies would be successful.

My day was spoiled, however, by the enormous quantity of trash — especially beverage cans and bottles that litter the banks of these creeks. I filled the trunk of my car with enough “throwaways” to fill two garbage bags and still the banks were thick with our societies “convenience containers.”

Upon returning home, with my hands still cold and muddy from handling this

trash, I called my State Representative (both Senate and House of Representatives) and expressed my desire for returnable bottle bill similar to those Oregon, Maine, Vermont and Michigan. This bill basically outlaws nonreturnable beverage containers. (Both statesmen, incidentally, spoke of “bottle bills” dying committee; however, letters, phone call and face-to-face visits could reverse the trend). From personal experience traveling and vacationing in these states, works! It’s rare to see streamside (or roadside) beverage containers as are common in Pennsylvania. Additionally, a time when our natural resources are dwindling, does it make sense to use *anything* once then throw it away? Many of us have been “reusing” trout for years by releasing them to be caught (or used again).

Wouldn’t it be nice if the next time someone uses the term SLOB sportsman you could say that we, the fishermen and hunters of Pennsylvania, banded together and applied political pressure to our State Representatives to pass this “bottle bill”? I think so.

ALAN R. MULA
Douglassville

IT WORKED?

I read your “*Bait Up*” article in the April issue of the *Pennsylvania Angler* and found it very useful. I used the suggestion in the article and in 1½ hour caught over two dozen night crawlers.

I find these types of articles very useful and hope that you keep up the good work.

MIKE AMENDOL
Washington, Pa.

“JUST DON’T CARE...”

I would like to thank the Fish Commission and their employees and all the people who help stock and clean up the streams, for they make my favorite hobby and sport more enjoyable by the year.

I would like to suggest to all fisherman hunters, and everyone who enjoys the outdoors, to make an honest effort to help clean up the litter that appears at our favorite fishing, picnicking or hunting spots. All of us see people littering but many times nothing is said to these inconsiderate people. If I see someone littering, I make it my business to explain to them, in a civilized way, the damage they are doing to all the people who enjoy the outdoors. Many people just don’t care and I guess we will always have to clean up after them. But maybe with everyone helping we could open the eyes of some of these litterbugs and make our favorite

bas in Pennsylvania more beautiful than they already are. Thank you.

JAY C. BECKER
Warrington

S. I would like to know if there is any legislation in the works that would require deposit on every bottle or can of soda and beer sold in Pennsylvania. This type of law, I believe, would help a great deal in fighting the ever present litter problem.

Reader Alan R. Mulak ("**WHY THROWAWAYS?**") sought the answer to our P.S. and we can only say that his final paragraph holds the key to the future of public use of private property. Ed.

... BY ANY OTHER NAME"

Just received my first copy of the *Pennsylvania Angler* and read some real good articles. Perhaps I will have to read accounts of other fishermen. This is the second year I've had a license and haven't caught a thing yet. Par for the course here. But, no different than Washington State, California, Texas, Ohio, Tennessee, Louisiana and Alaska. Fish see me coming and say, "Oh Boy, are we going to have some fun with this human idiot." They jump out of the water and either steal my bait (live), or stick out their tongues and bump their noses at me, and laugh.

I was reading "*Leaky Boots*," in the July issue, Mr. L. E. Ray's letter, and was reminded of regional names for fish. I was fishing for bass down in the Bayous of Louisiana a few years ago and came upon an elderly woman fishing. Picture in your minds the typical southern "Granny type" woman — an old faded dress, hair put up in a bun on the back of her head and smoking a corn cob pipe. She was seated on a log puffing away and watching *seven cane fishing poles* (A "No-No" in Pennsylvania!) She had about a dozen carp on a stringer in the water.

I asked her, "Any luck?"

She replied, "Oh, my goodness, yes, look at that lovely mess of *bugle-mouthed bass* I caught," pointing to the carp on the stringer. I've heard carp called many names but never "bugle-mouthed bass."

Pennsylvania has many fine fish. You don't have bass like in Arkansas or Louisiana true but you don't have alligator garfish and coral snakes either, and I wouldn't trade Arkansas or Louisiana for the fine fish that don't take my baits in Pennsylvania. I've hooked an Opalouzas catfish on a trot line (another "No-No" in Pennsylvania) in the Savine River in Texas. That catfish weighed 104 pounds. So, I cooked it on a board in a lard kettle for a week, then threw away the catfish and ate the board. I am told I wouldn't have to do this to any fish in Pennsylvania.

In conclusion, I thank you gentlemen for your time and the *Pennsylvania An-*

gler. Maybe some of you and the fish wardens can persuade these fish to bite. I'll even settle for a string of "lovely bugle-mouthed bass."

JAMES B. INGHAM
Linglestown

Another Pennsylvania "No-No" is one more "... throw away the fish and eat the board" story! No wonder the fish won't bite! Ed.

SKIFF SEARCH —

I would appreciate it if you would help me find someone who makes plywood skiffs.

I have a Skimmar 13-ft. plywood skiff that is 20 years old. It was made by Connecticut Boat Company, Greenwich, Connecticut. I wrote to the company but my letter came back. They must be out of business or moved.

If you know anyone who makes a 13- or 14-foot skiff, I would appreciate a reply. Thank you.

J. VELTRI, JR.
310 George Street
Throop, Pa. 18512

Editor's note: anyone able to supply Mr. Veltri with the information he seeks is requested to write directly to him.

To find out what others are catching... where...and how, you'll need the *Angler*!

There are lots of good magazines on the market. We read them, and like them, too. But, and that's a big but, only the *Pennsylvania Angler* gives you the complete Pennsylvania fishing and boating story. Introduce one of your friends to the *Angler* — today.

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MEALS from the CREEL

by Arthur J. Michaels

*Cooking this one is
"elementary"!*

Quick! What do you think of when you hear the word, "eel"? An ogre? A snake? A revolting catch when you're fishing for another species?

Think again. The eel is an epicurean delight around the world. And once you land a writhing eel, unhook it carefully, and bucket the twisting thing, you can prepare a pot pourri of delicious meals with an international flavor.

First, though, you have to clean and skin your catch. Make a cut along the belly and remove the entrails, the same way that you'd dress any fish. Then, tie a length of string around the eel's head, like a noose, and secure it to a board, post, or tree. With a sharp knife, cut the skin around the eel's head. Use a pair of pliers to pull the skin off.

Most of these recipes call for your cutting the skinned and cleaned eel into two- or three-inch pieces. But make an extra slice on each piece along the backbone. This will prevent frying eel pieces from jumping in the pan.

And if you land a lunker, whichever recipe you prepare, first fill a large pot with a gallon of water and four tablespoons of vinegar. Then parboil the eel about a half-hour to improve the eel's flavor. Then cook the eel according to your recipe.



Feared, maligned, generally disdained, the eel is nonetheless excellent table fare and right now is the best time to take an eel fishing trip.

HERBED EEL

1½ pounds eel
1 tablespoon basil
1 tablespoon thyme
4 tablespoons olive oil
salt and pepper

Skin and clean a good-sized eel, and cut it into three-inch pieces. Mix the herbs and oil. Dip pieces of eel in the oil and herbs. Add salt and pepper to the eel and place the pieces on a broiler rack about four inches from the flame in a preheated broiler. Broil for ten minutes. Continue to baste the eel pieces every few minutes while cooking. (Try this dish with sage or rosemary, too.)

FESTIVAL SMOKED EEL

3 pounds smoked eel
1 large head lettuce
2 large, sliced tomatoes
15-20 radishes
2 small celery bunches with tops
15-20 ripe olives
15-20 green olives, stuffed
20 sprigs water cress
2 large pimiento, cut into strips
4 hard-boiled eggs

1 large, sliced cucumber
1 teaspoon basil

You may buy the smoked eel or smoke your own. In ice water, chill a prepared garnishes. On two long chilled platters, arrange beds of lettuce leaves and put eel in the center of each. Decorate with garnishes from the center of each platter, working toward the edges. Line the edge of each platter with slices of cucumber and water cress, and alternate with garnishes. Serve chilled with mayonnaise and hot, buttered rolls.

INSTANT EEL

Skin and clean your catch, then cut into three-inch pieces. Then grease a frying pan and cook your catch until browned. Salt to taste. Try this recipe with the fish sauces on pages 157-159 of the Pennsylvania Anglers Cookbook (\$2.50 from The Pennsylvania Fish Commission). This recipe is well-suited for small eels, two feet long or less.

MARINATED EEL

2-3 pounds cleaned eel
1 cup vinegar

1 clove garlic, chopped and crushed
1 sliced onion
1 bay leaf
1 teaspoon marjoram and thyme
salt

Slice the eel into three-inch pieces and cook with no seasoning under a preheated broiler for ten minutes. Layer the cooked eel in a deep dish. While the eel is broiling, boil the other ingredients together in a large saucepan. After fifteen minutes of boiling, pour the mixture over the pieces. Allow this to cool for an hour, then refrigerate. Serve cold the next day.

BAKED EEL

1½ pounds eel
½ cup oil
1 small clove garlic, finely chopped
lemon juice
pinch of thyme and parsley

Clean and skin the eel, then cut it into three-inch pieces. In a casserole dish, heat the oil. Add a pinch of salt, the garlic, the thyme and parsley. Then place the eel slices in and add a little lemon juice. Bake at 400° for 25 minutes. Serves 4.

EEL STEW

1½ pounds eel
3 stalks celery, each six inches long
5 peppercorns
5 tablespoons butter
cornstarch
pinch salt

Skin and clean your catch and cut into small pieces. Place the pieces in a large pot with water barely enough to cover the eel. Add the celery, peppercorns and a pinch of salt. Cover the pot and cook the eel over low heat for 60 minutes. When the eel is cooked, remove it and place the eel pieces on individual deep plates for serving. Remove from the pot and discard the celery and peppercorns. Add the butter to the liquid in the pot, and thicken to taste with cornstarch dissolved in cold water. Reheat the liquid and use as a sauce for the cooked eel.

CURRIED EEL

3 pounds eel
3 onions, medium
1-2 tablespoons curry powder
5 tablespoons butter or margarine
3 small tomatoes
lemon juice
salt

1 clove garlic
Heat the butter in a saucepan and

add the chopped onions, garlic and curry powder. Cook over low heat for about five minutes. While this is cooking, cut your cleaned and skinned eel into three-inch pieces. Peel and chop the tomatoes and add them to the saucepan with a pinch of salt. Add water to make a thick sauce. Place the eel pieces in the saucepan with lemon juice and cook uncovered until the eel flakes. Serves 6-8.

SAUCY EEL

2 pounds eel
2 medium onions
½ teaspoon salt
2 teaspoons sugar
1 teaspoon oregano
1 teaspoon basil
1 teaspoon marjoram
1 teaspoon thyme
12 ounces tomato sauce

Slice the onions very thin and cut the cleaned and skinned eel into two-inch pieces. In a large baking dish, cover the bottom with a layer of eel

pieces, then alternate layers with slices of onions. After each layer is set in the dish, add a layer of tomato sauce with the rest of the ingredients. Cover and bake for 25 minutes at 400° in a preheated oven.

FRIED EELS

1½ pounds eel
½ cup flour
1 beaten egg
½ cup oil
salt and pepper

Clean and skin the eel; cut into three-inch pieces. Add salt and pepper to taste to the flour. Dip eel pieces in egg and roll in flour. Fry each piece six minutes on each side. Drain cooked pieces on a paper towel before serving.

Try not to let diffidence or distrust taint your eel cookery or your eel fishing. Remember that the American eel is a native North American species of fish, just like a native trout, bass, or pike.



(Editor's note: eel fishing has perhaps the smallest following within the angling fraternity. The author introduces our readers to this little-pursued sport some with "where-to" and "how-to" tips on page 18.)

Bait Up

by Don Kingery

illustrated by
Ray Piccolin

BUTTERFLIES & MOTHS

The order Lepidoptera contains the butterflies and moths. A butterfly or moth goes from egg to caterpillar, to pupa, to adult, during the course of its development. The second, or larval stage, is the one most commonly used as bait. This is the main feeding and growing stage of the insect. Most caterpillars are solitary in nature, and will be found on their food plants. Shake larger shrubs and trees or hit the branches sharply with a club to dislodge them. Hand pick them from small plants. Some species, the spring tent caterpillars and the fall web worms for instance, are colonial and build silken nests. Cut off the branch and take nest and all with you when you go fishing.

Caterpillars can be reared in a cage as long as they are supplied with plenty of fresh leaves from their food plant. Many species are plant specific; that is, they will only feed on a certain type of plant. Others will accept a wide variety of substitutes. The safest thing to do is supply them with leaves from the plant you found them on. Caterpillars can be kept without food for short periods (one to two weeks) in a refrigerator. The best method I have found for raising caterpillars is to make a large bag out of cheesecloth and enclose a branch of the food plant with the caterpillars inside. This keeps the caterpillars in and the parasites and predators out. The bag will need to be moved from time to time as the larvae run out of leaves.

Hook large caterpillars through the body, or string several small ones on a hook; fish them at any depth. Larger specimens will catch larger fish as a general rule. Some species of caterpillars have stiff hairs or spines which are irritating to the touch and fish reject them. A good rule of thumb is to stick with smooth-skinned caterpillars or those with soft hairs.

Adult Lepidoptera are usually



taken with a net. Butterflies will be found around flowers or congregating near puddles. The majority of moths are nocturnal but are attracted to artificial lights where they can be netted. Moths can also be collected by "sugaring." A bait of molasses, brown sugar and vinegar is mixed up and painted on the sides of trees. Starting at sundown, check the trees every half hour or so. The moths will be found feeding on the sweets and can be caught with a jar.

Butterflies and moths are difficult to keep in captivity; most of them refuse to feed and soon die. Keep them in cages or jars and use them as soon as possible. Hook adult Lepidoptera through the abdomen and drift them on the surface. Their struggles will coax many a gamefish out of his hiding place. Dead and dried specimens can be dabbled across the surface on a fly rod or cane pole.

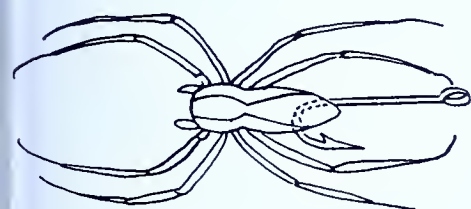
SPIDERS

Mention spiders to most people and you will get reactions varying from

mild curiosity to total revulsion. Spiders are one of the most common but least used baits in the world. They live in every conceivable habitat, are easy to collect, and will take anything from panfish to bass, yet people refuse to fish with them. Most people claim it's because they fear being bitten. Actually, most spider bites only cause as much irritation as the average mosquito bite. The two exceptions to this are the Black Widow and the Brown Recluse. The Black Widow is common in the United States. Its body is about the size of a pea, and is colored a shiny black with a red hourglass on the under side of the abdomen. It builds an irregularly shaped web and is fond of dark, damp corners. The Brown Recluse is not as common, but is about the same size as the Black Widow. It is recognized by its light brown color. If you worry about being bitten, take along a good pair of rubber gloves to protect your fingers and hands.

Spiders can be captured with a jar or net. Look for them everywhere, under rocks and logs, in fields, bushes.

rees, gardens, basements and old buildings. Many spiders hibernate, so a winter look for them under the bark of dead trees and logs. The orb or web-making spiders are best caught by placing the net under the spider and shaking the web or scooping upward. Most of these spiders have a habit of curling up and dropping to the ground when danger threatens.



Spiders are incredibly cannibalistic and for this reason are almost impossible to raise or keep in captivity in large numbers. They will keep in a jar in the refrigerator for several weeks. The cold slows down their metabolism and they aren't quite as anxious to eat each other. Spiders live longest when hooked through the abdomen. For best results use a fly rod or cane pole and start them on the surface, letting them sink at their own rate. Many spiders will play "possum" when they first hit the water but after a minute or so they become active. Spiders can be frozen or preserved in 70% alcohol for future use.

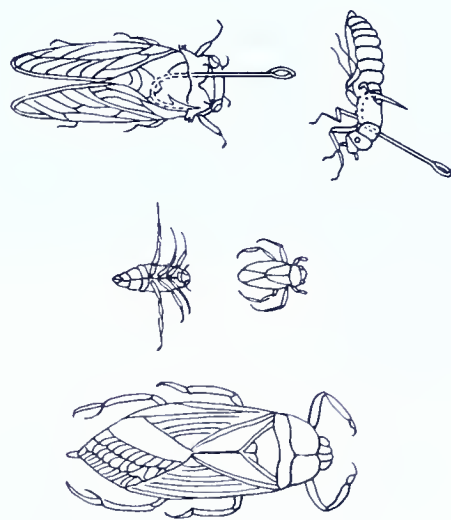
"BUGS"

The Heteroptera are the true bugs, recognized by their piercing and sucking beaks, and their wings (when present). The forewings are leathery at the base and membranous toward the front while the hindwings are entirely membranous. Among others, this order contains the giant water bugs, water boatmen, back swimmers, water striders, bed bugs, cinch bugs, kissing bugs and stink bugs. All are suitable as bait, but the terrestrial species are more easily gathered and readily accepted by fish.

Most of the aquatic species are predators and capable of inflicting severe bites that cause a burning sensation for several minutes, so be careful when handling them. They can be netted year-round from ponds and quiet, slow-moving streams. They will keep well in an aquarium provided they are supplied with smaller insects to feed on. Terrestrial bugs are either

collected by rapidly sweeping a butterfly net back and forth through weeds or by placing a blanket or upside down umbrella on the ground under bushes and rapping the main stems with a club. The insects fall on to the cloth where they are easily seen and can be captured by hand. They keep well in a terrarium but, since they are so easy to gather, it is hardly worth the effort.

Like all insects, Heteroptera can be dried for future use. They should be hooked through the abdomen and fished using the same techniques recommended for grasshoppers.



CICADAS

These "singing" insects have many names, but cicada, harvest fly, and locust are the most common. The Periodical Cicada, or Seventeen-year Locust (Thirteen-year Locust in the South), is the most famous member of this group. It is easily recognized by its red eyes and wing veins. Female cicadas lay their eggs just under the bark of twigs. After hatching, the young nymphs drop to the ground and burrow into it, feeding by sucking the juices of tree roots. When mature, the nymph digs its way to the surface and climbs a tree trunk, fence post, or other suitable support. The skin then splits down the back and the adult struggles out.

Emergence usually occurs very early in the morning during the month of June, so if you intend to collect the nymphs and adults next summer, you will have to get up at daybreak and start making the rounds of the trees in your yard. Check them every ten to fifteen minutes until the sun is completely up. Place the nymphs in a jar

or can and they will soon split their shell and emerge as mature adults. Hook them through the head or abdomen and fish them on the surface.

ROACHES

Everyone knows the roaches, at least by reputation, but few know that they're one of the best bass and pan-fish baits around. Some species of roaches give off a bad odor but most are clean, quiet, and easily raised in captivity. They are not fussy eaters either — raw vegetables, dog food, grass, bread and garbage are accepted with equal enthusiasm.

Cockroaches, also called croton bugs and black beetles, are worldwide in distribution. Some of the one thousand known species live in close association with man, others shun contact with man, preferring the outdoors. Indoors, hunt for them in damp basements, woodpiles and under furniture. Outdoors, seek them under loose bark and under logs. One of the easiest ways to collect roaches (and crickets) is to trap them using a loaf of staple bread. Cut the bread in half and hollow it out; paint the inside lightly with old bacon drippings or some other type of cooking grease. Tape the two halves back together and cut a one inch hole in one end. Leave the "trap" overnight in an area known to contain roaches and pick it up in the morning.

To raise roaches, get a container with a tight lid, put in a layer of dry dog food, and an apple to provide humidity. The roaches will do the rest. Unless you start with adult roaches, it will take a while to build up a self-propagating colony, as roaches commonly take a year or more to reach breeding age. Hook roaches through the body and fish them as you would grasshoppers.



(continued on page 29.)

just crabbin' around

by don shiner



"Careful on the backcast, retrieving snagged flies is frustrating!"

So you've got an occasional problem while bass fishing – like tangled lines, an outboard out of fuel, no raincoat when that downpour occurs, or fingers pricked with some sharp barb? Consider yourself lucky. Imagine how some other animal, say, a crayfish might cope

with the same tasks.

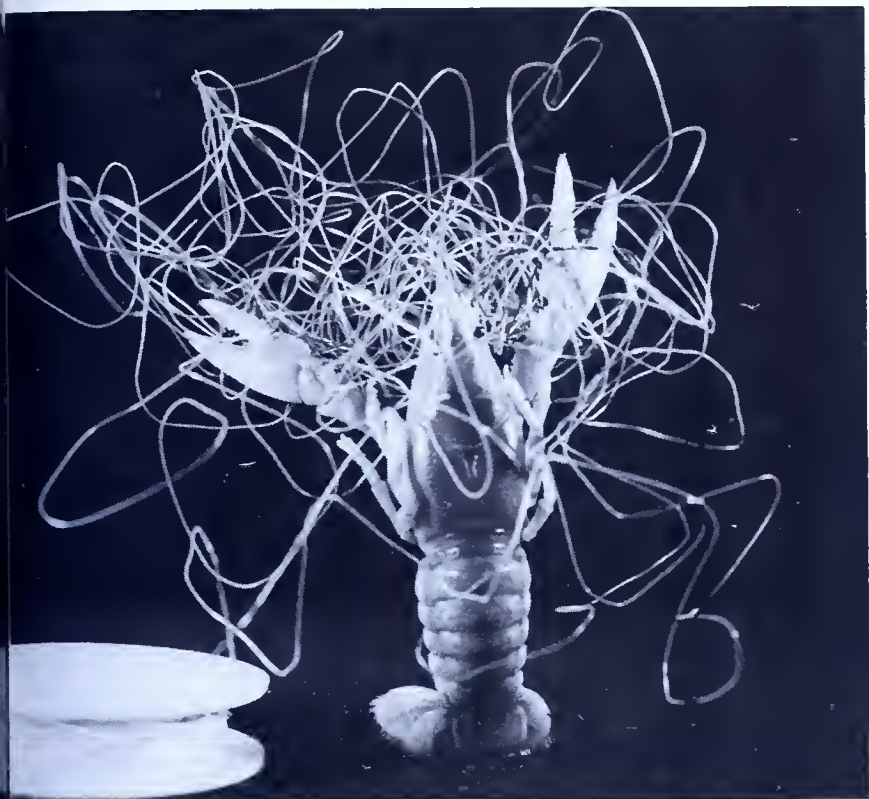
In a humorous vein, we put a leftover crayfish bait to work with various items of tackle. His problems proved far more serious than yours. The results, shown on these pages, are pictured for your entertainment.

"Let's see, a coachman, cahill? What a mess I'm in!"



"I'm all feet when it comes to feathering out hooks!"





ellow can really get attached to some of these monofilaments!"



"Wheeee! This thing spins like a ferris wheel!"

ast time I'll piggyback on these contraptions!"



"No doubt about it, it feels better on this end of the line!"



Fly Fishing for Erie's Steelhead & Salmon

by Marshal F. Young

Lake Erie's undisputed fly fishing champion with the all-tackle heaviest salmon taken from the lake shares his expertise in fly fishing for these most glamorous heavyweights.

Marshal F. Young's chinook weighed 25 pounds and taped a whopping 39 inches!



PART I

... in the lake ...

The fly was a #6 Mickey Finn and the year was 1968 — a vintage year for Pennsylvania anglers, for, among other good things, that was the year the salmon came to the grape country

of Erie County. On a cold frigid late afternoon in February, 1968, I stood with Bob Hetz at the first 3CU salmon raceway on Trout Run watching 6" coho smolts feed avidly in the clear spring water. Soon, as the sun

would warm the rich sandy soils that are the genesis of the springs that form Trout Run, the restlessness of the smolts would increase until their release into the run in late April. Later on, in the fall when the lake

rested under its flaming fall foliage and the scent of grapes and apples still hung heavily in the cold morning air, I cast, hooked and landed a pair of precocious two-pound coho off the mouth of Godfrey Run on that beautiful little Mickey Finn. Since that time I have fished the runs of salmon and steelhead with an enthusiasm that at times has bordered on frenzy.

As the world is shaped today, runs of steelhead and salmon are at best a dwindling resource. No fish require more of an angler; no fish resist stronger, leap higher, *nor come to the fly better*. And none are more beautiful than the silvery, mint fresh lake run. Nor are any fish more noble than the black, spent coho waiting patiently for their tragic, but natural, end.

It soon becomes apparent to the angler that there are two distinct aspects of this fishing. The first involves feeding fish in the lake moving toward the shoreline in the early fall and coming into the influence of the streams. There, they seem to mill around for days, moving out into deeper water during periods of rough water or bright sun; then returning to hold right in the stream flow during the late nights and early mornings, even making little exploratory runs into the first pools in the stream, then returning to the lake before their last great spawning surge into the streams.

The second stage of this lake-run fishing finds the fish in the confines of the river system. Here the fish are bent completely on reaching their beds for the final act of spawning. The salmon, especially, are non-feeders now, tending to circle the pools in an aimless fashion or to hold by the hour on the bottom and to be absolutely dour.

The lake fishing probably demands much more of the fly caster than does tossing a fly in any of the streams. The casting distances alone on the lake will intimidate any angler, especially when a surf is rolling and fish can be seen breaking an honest 100 feet off the beach. To wade into that ice cold water until it reaches your belly, work out a 30-foot shooting head, then yank off 40 or 50 more feet of shooting line, launch the whole mess up into the air, drive it out where you hope the fish are moving . . . do it cast after cast, hour after hour, while the spin fisherman standing beside you left long

ago with his three fish . . . good grief man, you need to be half nuts! But when the take finally does come, and come it will, what rewards! Oh, what rewards!

I think the minimum rod for fishing in the lake would work out to be about an 8½-foot to 9-foot stick that will easily cast an 8 weight line. I like a 9-foot glass or graphite calibrated for 8-9 weight lines and then mostly use the 8 lines. This gives me a little more rod and a little lighter line which makes continuous distance casting a lot easier. I have fished all weights of lines in the lake from 6's to 11's but have settled on 8's and 9's as the most useful.

As far as the actual lines go, I have discarded everything but my shooting heads. Nothing casts easier nor gives better distances than a properly balanced and cast shooting head. I have further refined my heads to two specific sizes for lake fishing. The first is a 30-foot, 8 weight slow sinker for fishing off the beaches and the other a 9 weight extra-fast sinker for fishing in the lake from a skiff or working a deep pocket from shore.

The 8 weight slow sinker has really been my key to many more fish these last few seasons. The water off the mouths of the streams where the fish tend to congregate is not deep. In fact water a hundred to one hundred fifty feet off the beach many times will not be over eight to ten feet in depth. With a quick sinking line I spent half the time tying on new flies and tippits or putting my fly under the fish. I was fishing for stones — not salmon.

Salmon or steelhead in the lake seldom suspend or hold on the bottom off the beaches. They are a restless feeding fish, almost constantly on the move. Consequently, the fly can be fished higher in the water with more speed than will be used later when the fish have moved into the streams.

To my shooting heads I splice about one hundred feet of 20-pound mono shooting line. In spite of its propensity for tangling I still like mono better than any of the braided shooting lines. As a filler on the reel spool I use at least 200 yards of 20-pound braided backing. It probably wouldn't hurt, if the reel is large enough, to add another 100 yards.

The third week of October 1976 had been a fine week on the lake. I had taken my biggest steelhead up to that time and a number of fine salmon,

topped off by a magnificent 25-pound chinook that is still the heaviest taken from the lake. Everything had gone along in fine fashion, everything had been going along just *too well*. The morning after I had weighed and measured the big chinook I was back off the mouth of Twenty Mile Creek in a skiff. Just as dawn broke I had a hard take but soon brought the fish in close to the boat. It was a huge salmon. In a pass around the skiff I held the fish too tightly and it struck the propellor shaft. There was a tremendous boil on the surface and the fish simply ripped off line. Before I could collect my wits and get the motor started to chase the fish I could see the bare metal of the spool showing. I grabbed the backing and broke the fish off at the fly. Two days later in the same spot I had another large salmon up to the boat and had rammed it into my big net. It promptly jumped out and again ripped off all my backing and had to be broken off. By then I would have given anything for a little more backing.

The leaders I use are basic and simple, and tied for tough fishing. Knotted on the end of the head with an epoxy splice is a two-foot section of 20-pound mono. The middle section follows with two feet of 15-pound mono, tipped out with about two feet of 12-pound mono. All in all, a six-foot tapered leader tipping out at 12-pounds. By extending or shortening the length of the 12-pound point it is quite easy to control the depth the fly is fished during a certain retrieve. Extending the tip will let the fly ride up a bit. I will add a finer point of 8-pound mono if the fish are difficult and I need to fish a smaller fly, or if the water is very clear, or if I want to ride a fly closer to the surface.

Where the fly fishes and *how* seem so many times to be critical to the take and many times so insignificant a thing as leader size and length can spell the difference between a good strong strike or a blank.

As far as the fly goes, I never really know how much importance to attach to it. I think the best advice is to keep the ties simple, be sure they have a good clean, slim, silhouette, and that the flies are tied to be good hookers. By that I mean the hooks should have a good gap at the bend and the wings should not extend much beyond the bend of the hooks.

I think the most effective patterns

for the lake have to be imitations of the forage fishes the salmon and steelhead actively feed on. Smelt, varieties of shiners, young of the gizzard shad, and the emerald shiner form a large part of the forage for the fish on the beaches. I find in the salmon's stomach, so many times, 2½- to 3-inch smelt and, because of that, I think my patterns tend to be forms of smelt imitations.

The following is a list of patterns I use and have found to be effective. Like most anglers I carry and fish far too many patterns but these flies should give an angler a starting point and furnish something to think about.

(1) Ballou Special: hook size 4-2-2/0, 4× to 6× long streamer hook; head: black; tail: one or two short golden pheasant crest feathers curving downward; body: medium flat silver tinsel; wing: about a dozen hairs of red bucktail, over which are two white marabou feathers of the same length tied on flat; topping: about a dozen strands of peacock herl as long as the wing. If I were limited to two flies this would be one choice.

(2) (The Incredible) Silver Minnow-Joseph Bates: hook 4-6, 4× to 6× long streamer; head: built up and painted silver . . . small painted black eyes with a yellow dot in center; tail: a small bunch of gray stripped mallard herl or grizzly hackle; body: wound tightly with lead wire. The wire body is covered and tapered with silk floss of any color. This is covered completely by a double overlay of embossed flat silver tinsel. Throat: a small bunch of long crimson rooster hackles, the longest ones extending to the point of the hook. Wing: a very small bunch of white bucktail, over which is a very small bunch of blue impala hair. Over this is a gray mallard flank feather tied on flat on top of the hair so that it surrounds all of the hair. The elements of the wing extend to the bend of the hook. This is a strange appearing fly but it has been an excellent pattern for steelhead and this spring (1978) it has been an excellent pattern for the coho fishing at the mouth of Elk and Twenty Mile Creeks.

(3) Polar Bear: head: black; body: silver mylar; underwing: sparse white polar bear hair; overwing: white polar bear hair under a less amount of olive greenish dyed polar bear hair, under a small amount of black bear hair; hook size: 2/0-2-4, 4×-6× long streamer

hook. For a number of seasons this was one of my most productive patterns on the lake.

(4) Sunk Lure-Hugh Falkus: This fly was sent to me by a Welsh angler last year and is taken from Hugh Falkus' book "Sea Trout Fishing." I immediately lost the two I had been sent so a night at the vise gave me a quantity. In a generally poor season on the lake this past fall, a 2½-inch Sunk Lure took more steelhead and salmon than did any other fly—including three good lake-run browns that I took this past December.

Head: black painted aluminum; hook: this is a tandem hook fly usually tied with a pair of heavy #6 wet fly hooks joined by 20-pound mono with the distance from the eye of the front hooks to the bend of the tail hook being 2½ to 3 inches. The hooks and mono are painted with aluminum paint. Wing: two long narrow medium blue hackle feathers tied in at the head extending back to the bend of the tail hook. Topping: eight to ten strands of peacock herl over wing. That's it. The fly is incredibly simple, effective and an excellent hooker.

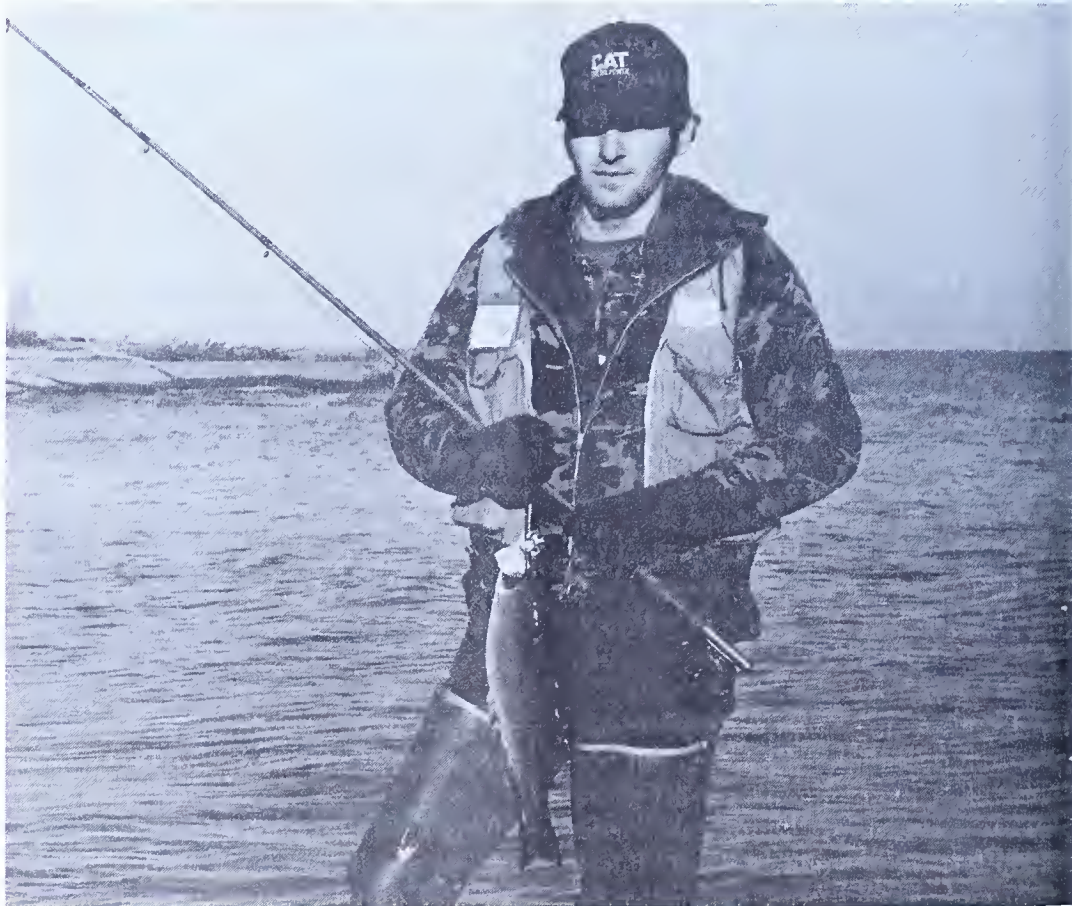
(5) Cock Robin Fluorescent-Joseph Bates: head: black; hook size: 2-4, 4× long streamer hook; body: rear half

fluorescent yellow wool, forward half red fluorescent wool; butt: narrow flat silver tinsel; ribbing: narrow flat silver tinsel, continued from butt; throat: a small bunch of fluorescent red hackle fibers or hair, mostly extending to the bend of the hook. Wing: a very small bunch of fluorescent orange-red bucktail over which is a very small bunch of white hair, over which is a very small bunch of fluorescent orange-red hair, to form a triple wing extending to the bend of the hook. I tie my Cock Robins for lake fishing on heavy hooks and then weight the shank with about ten turns of lead wire. In murky water or dark days this fly can be deadly.

(6) Mickey Finn Fluorescent: Another bright, old favorite that I would hate to be without.

(7) Salmon Killer-Irv Thompson: hook 2/0-2-4 long streamer hook; head: black; body: double wrap of silver tinsel; tail: black bucktail over lavender bucktail; wing: sparse black bucktail over lavender bucktail; hackle: blue tied on three turns before wing. A dark fly is universally useful to the steelhead and salmon angler and this is one of the best. All of my big chinooks have been taken on this fly and some of my best steelheads. I wouldn't go to the lake without this excellent pattern.

Steelheader Harry Bennett, of Union City, holds a three-pound steelhead he had just landed at the mouth of Elk Creek—it was 18 inches long.



PART II

... in the streams ...

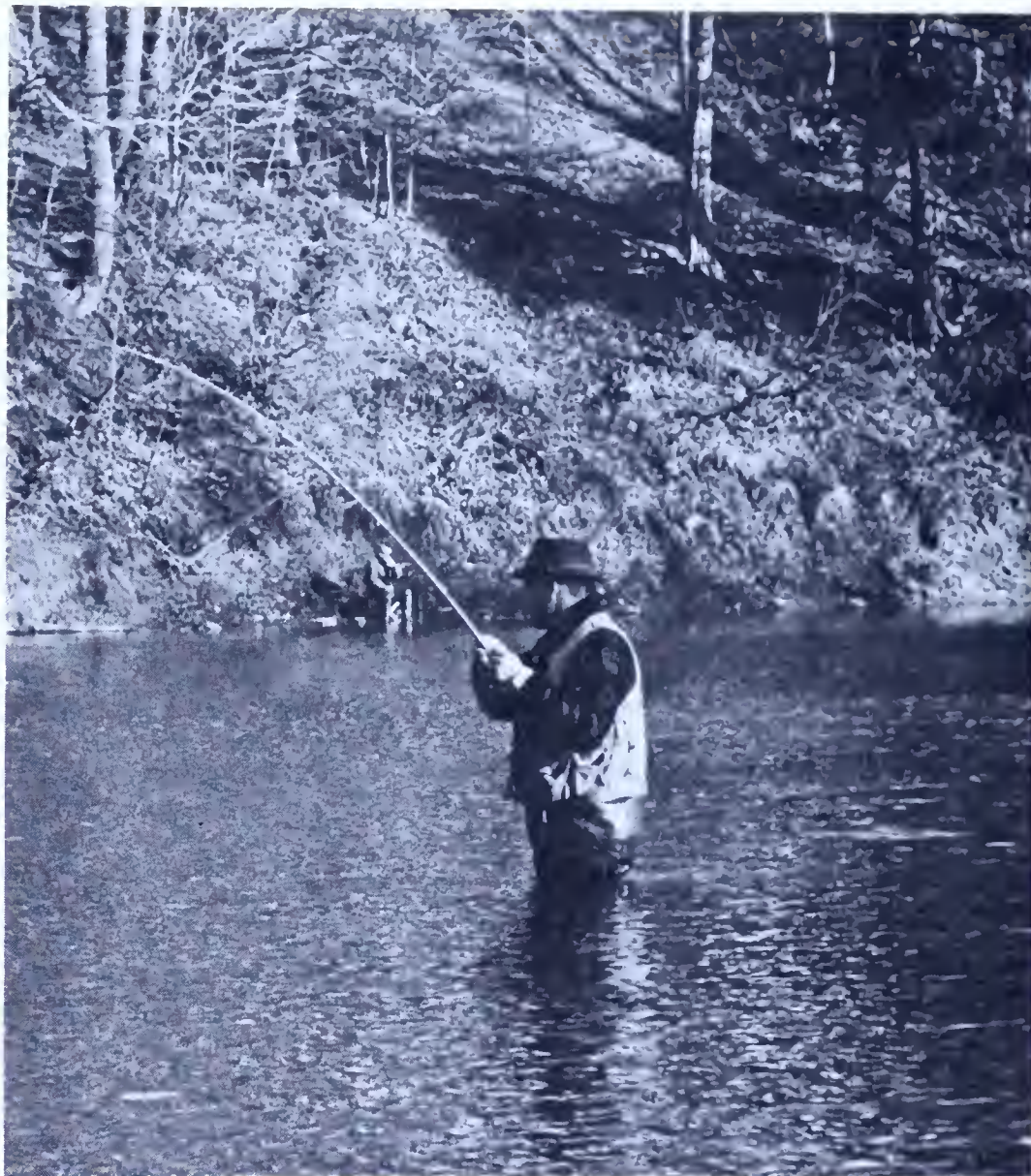
The fog was a moist presence last fall as I parked the car on the cliff that looks into Twenty Mile Creek Gorge and more importantly into the "Snake Pit." The trail into the bottom of the gorge is precarious at best, but after a daybreak fog has rolled in from the lake, it can be forbidding. Visibility was reduced to ten narrow feet — just enough to grope down from handhold to handhold. I could hear in the dawn's gray void, the roar and echoes of the stream as it spilled over the falls at the Snake Pit Pool and momentarily prayed for clearing water.

Two nights before, Dave Eklund and I had watched from the top of the Route Twenty Bridge as one salmon after another leaped the small falls at the bridge, then beat it up the rain-swollen stream over the concrete apron of the viaduct, heading upstream. We knew the Snake Pit would be loading up.

By the time I reached the bottom of the gorge it was still too foggy to see much as I worked into position to fish the holding water in the tail of the pool. The water looked clear enough but was still quite high. I knew that in the tail-out there would be good four to five feet of flowing water — a perfect hold for any steelhead that might have run with the coho.

I freed the #4 Kispiox Special from the keeper, wet it well in the stream; then, keeping low, pitched it up and above the hold. By the third or fourth cast I knew the sink-tip line and slightly weighted fly were fishing right. I think the next cast went a little too far up into the pool. The fly had no more landed when there was a boil in the water and a small salmon leaped. To land the young male coho I had to bring him down through the pool and land him in the fastwater below. After dispatching the salmon and burying it in the sand beside the stream I walked down to the Viaduct Pool while my favorite "tail-out" rested.

There were a dozen fish in the Viaduct Pool and what looked like two or three steelhead but there were no takers for me, so I hiked back to the



Don Foltz, of Lincolnville, plays a fine steelhead he hooked in Elk Creek using the "Triple Egger," a fly gaining popularity among Erie's anglers.

SNAKE PIT. On the second or third cast my line stopped and as I tightened, the surge that followed signaled "big fish." The steelhead never leaped. She bore through the currents in the "Pit," then ripped into the tailout and shot out of the pool.

In the fastwater below the pool I beached her and laid the beautiful hen near the buried salmon. She was a gorgeous steelhead . . . small-headed, thick, heavy-bodied, purple-black on the back with just a faint touch of pink on her flanks blending into a snow-white belly. Back at the store that morning she weighed nine pounds fourteen ounces and measured twenty eight inches — my best steelhead from the Lake Erie streams.

By the time Dave joined me at the pool, the sun was burning through the fog and we could watch the salmon in the "Pit." Two were magnificent coho

that endlessly patrolled the confines of the pool like a pair of sleek gray missiles. The others milled endlessly, exhibiting a boundless amount of energy. None were takers.

Finding the fish and then planning a strategy of approach and fly presentation to the pools and holds that contain the fish is the key to successfully fishing the lake streams. As the present regulations now stand only Twenty Mile and Elk Creeks offer much promise during the fall run. There is some fishing in Walnut Creek from Route Five to the mouth but congestion at the boat launch and access areas makes casting difficult at best.

Both Elk and Twenty Mile Creeks hold enough water in a usual spring and fall to make fly fishing worthwhile and both streams have a good run of fish. Trout Run has an exceptionally

good number of steelhead moving into it in the fall but present regulations prohibit fishing except during the months of January and February. The lake runs are very dependent on fall rains to bring the fish in and for that reason the longer, bigger streams that hold their water better usually offer the steelheader the best chances of a fish.

I can't overstate the importance of locating fish. Any high bank, tree, or other vantage point along the stream should be used to spot fish. It takes good "fish eyes," as Dave puts it, plus Polaroids and experience, to successfully spot holding steelhead and salmon.

No pool should be fished on a "chuck-and-chance-it" basis. There should always be some method in the approach and the presentation of the fly; whether it be from the top, bot-

tom, or middle of the pool. The angler should have a deliberate strategy in mind in each pool so that the best possible presentation of the fly can be made; be it dead drift, greased line, or the old tried and true across and down cast. I know, over the years, my best approach has been across and down to a fish that I have located, then, just as the fly reaches the hold I lightly lift the fly in front of the fish. Many times the lift has triggered a reluctant strike.

For most of the stream fishing I like a sink-tip line. Since distance casting is usually not a factor, a shooting head isn't really necessary. With weighted flies and a sink-tip line, most any depth that one encounters on the lake streams can be adequately fished. Most of the flies I use are tied on #4 or 6 1197B Eagle Claw steelhead hooks and need about an

eight weight line with an "8- or 10-pound leader point to turn over properly. I try to keep my leaders shortened to 6-6½ feet; but, in clear waters, or wide pools, it always is best to lengthen the leader and drop to a size smaller tippet.

My flies carry a bit or a lot of fluorescent material as the pattern dictates in their makeup. I like it. That red or orange fluorescence and white wing give me the combinations I have found most attractive. I am never sure just how important fly patterns are but without the use of fluorescent orange our steelheading this past January and February would not have been nearly as productive.

It was bitter cold on Trout Run this past winter but a fine run of large steelheads had come in during the late fall. Because of its springs, even the bitterest weather finds Trout Run mostly ice free. We used a #6 heavy hook, orange fluorescent chenille body and about a dozen strands of orange fluorescent wool tied in at the head and reaching back to the bend, nothing more. It was a very simple tie and was fished with one or two split shot about 6-8 inches in front of the fly. It also is a very easy fly to scent with anise oil and vasoline. I don't scent my flies, yet, because I hate to monkey with the mess when it is so cold, but Bob Scholler catches more steelhead than anyone else on the lake and he does use "stink flies." Time will tell.

My fly box looks something like this:

- (1) Kispiox Special: tail: red polar bear fur; body: hot orange chenille; hackle: red; wing: white bucktail; hook size: 4-6. This fly, without a doubt, has been my best pattern these last two seasons. Along with the Fall Favorite I fish these two patterns each time I am on the streams.
- (2) Fall Favorite: body: flat silver tinsel; hackle: red; wing: hot orange bucktail.
- (3) Brad's Brat: tail: hot orange and white bucktail; body: rear half hot orange wool, front half red wool; rib:



The two spring coho, left, were taken by Harry Bennett on a "Ballou Special." Spring coho salmon are young fish which feed heavily at the mouths of most of the lake's streams. Young cohos, such as these, run from 1½ to 4 pounds.



The "Hot Ones" at Erie: from top, left: Double Flame Egg, Brad's Brat, Orange Comet, Twenty Mile, Fall Favorite, Kispiox Special. Middle row, from top: Sunk Lure, Irv Thompson Salmon Killer, Foltz Triple Egger, Skunk Streamer. From right row, top: Ballou Special, Polar Bear, (The Incredible) Silver Minnow. All flies pictured have been "Erie-tested" and were tied by Richard Young.

flat gold tinsel; hackle: brown; wing: hot orange over white bucktail with the underwing dominating. This is an excellent pattern that has many variations. It originated on the West Coast as a steelhead fly designed and first used by Enos Bradner. Since then it has passed through the Midwest where it has been changed many times. I like it best in its West Coast ivory as it was first tied by Bradner for his Stillaguamish River fishing.

(4) Orange Comet: tail: hot orange bucktail, long; body: oval silver tinsel; hackle: hot orange; head: white tying silk with silver bead chain eyes. This is an excellent salmon pattern and with the added weight of the bead chain eyes sinks deep.

(5) Double Flame Egg: tail white hackle fibers, very sparse; body: hot orange chenille divided and built up in two sections, the two "eggs" separated with a single turn of white hackle; hackle: one turn of white. This is another excellent pattern for

salmon in the streams and a very easy pattern to weight.

(6) Twenty Miler: body: hot orange chenille; hackle: brown; wing: wood-duck. This is an excellent pattern of our own design and is usually tied on #8 to #10 hooks. This is a more subdued fly than the more common fluorescent patterns yet it is a good attractor in lower clear water. It and the Fluorescent Griz are the two most commonly used low water patterns.

(7) Fluorescent Griz (Grizzly King): tail: a few strands of fluorescent red impala or bucktail; body: fluorescent green wool; rib: silver; hackle: grizzly; wing: gray squirrel tail; hook size: #8 to #10.

(8) Skunk Streamer: tail: a few black strands from impala or bucktail; body: black wool; rib: silver tinsel; hackle: black; wing: black bucktail with a lesser amount of white bucktail over the black; hook size: 2-4 4x streamer hook. This is an excellent pattern for the fine spring coho

fishing that occurs each year at the mouths of Elk, Walnut and Twenty Mile Creeks. The water is usually stained and a dark pattern is very productive.

(9) Foltz Triple Egger: hook: 2-4 4x long streamer hook weighted with 6-8 turns of lead wire; body: at the bend, red fluorescent chenille built up into a small egg shape, then silver tinsel to middle of hook where another red fluorescent egg is formed, then more silver tinsel to head where another egg is formed. This gives a body with three "eggs" divided by silver tinsel; hackle: white; wing: long whitish badger hair extending just beyond the bend of the hook. Don Foltz is a fishing companion and one of the most prolific tiers on the lake. The first cast Don made with this new fly this spring he hooked and landed a fine lake-run brown. The second cast produced a salmon. Since that time a number of us have been using the "Triple Egger" with excellent results.

The River Otter— *Scoundrel? Or Hero?*

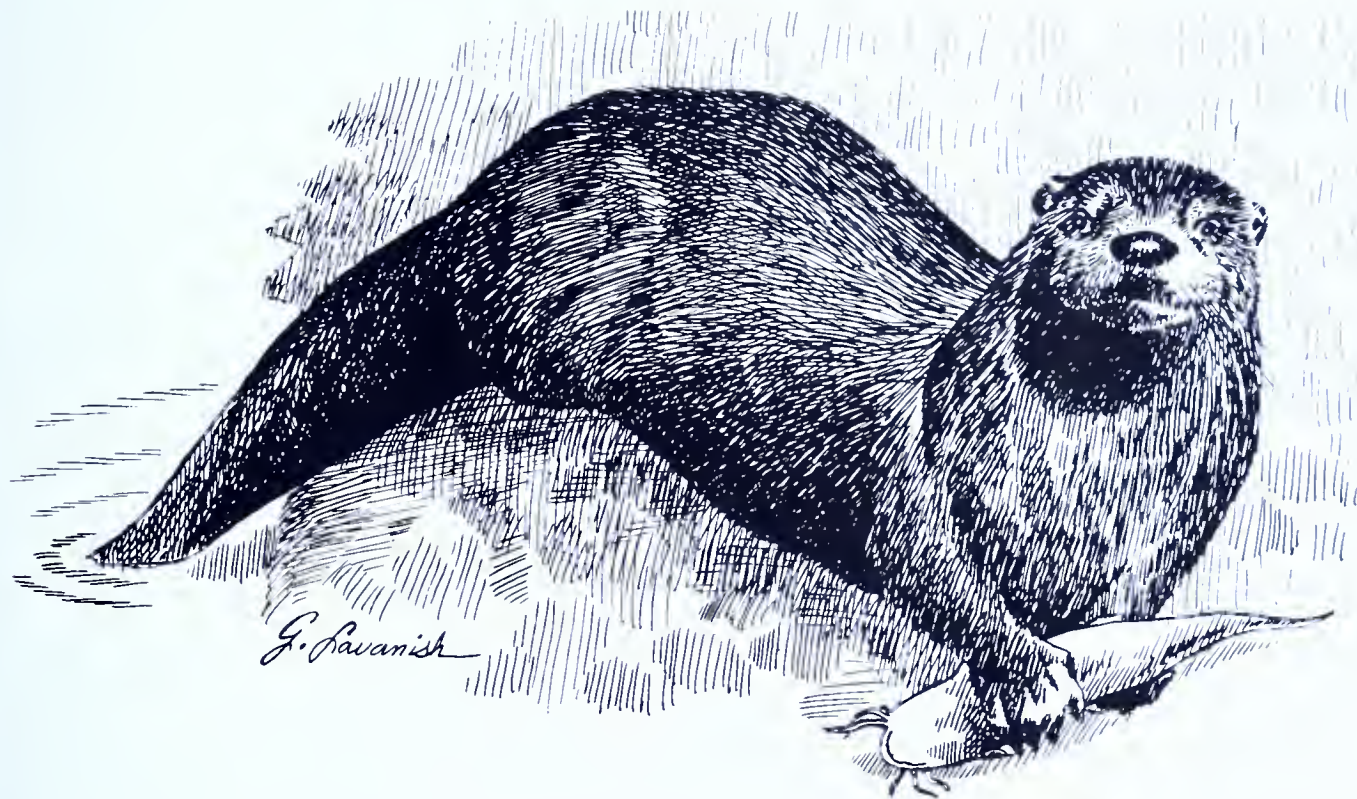
by Tom Eveland



Some twenty yards to the port something was scattering fish in every direction. My father and I saw several largemouth, pickerel and sunfish go aerial to avoid whatever was down there. Bubbles were churning the surface from an object moving so fast a definite shape could not be distinguished. Suddenly the surface was interrupted by a dark-furred head complete with beady black eyes, small round ears, large protruding whiskers and a comical looking black bulbous nose.

This almost funny looking (but in a handsome way) creature sat up in the water exposing his fully webbed front feet. There he remained, sniffing the wind for some sign as to what creatures had the audacity to interrupt his fishing that early summer morning. After convincing himself that we were harmless and posed no threat to his livelihood or fishing, he barked in a dog-like fashion, dipped below the surface and resumed looking for his breakfast.

We watched in amazement that clear fresh morning in the back shallows of Shohola Lake in upper Pike County as a North American River Otter displayed his swimming ability by creating boat-rocking waves. As we viewed his antics we couldn't help but think our long awaited bass trip had just gone down the tubes, at least in this lake. After several minutes of underwater fish chasing he finally appeared on the surface. At that point I heard my father



mumble something about that "... bass-eaten son-of-a-gun ..." as the otter swam toward a nearby log. But, instead of dragging a big flopping largemouth bass onto his chosen table, a small bullhead appeared.

Why did the otter swim by bass and pickerel to take an apparently less desirable species? The answer is that bass and pickerel aren't considered as "desirable" to the otter. What about other gamefishes? Does the otter consider trout, salmon, walleyes or pike as dinner fare? Some of these questions have been answered through research conducted by game biologists and wildlife researchers around the country.

As early as 1942, biologists were beginning to do stomach analyses studies on trapper-killed otter in Michigan. There the researchers found the otter's diet to be somewhat different than expected. It consisted of 36 percent forage fishes (suckers, minnows, madtoms, mud minnows, darters, muddlers and sticklebacks), 25 percent game and panfishes (trout, bullheads, perch, northern pike, bass, and sunfish), and the remaining 16 percent invertebrates and other food items. Other studies in Michigan found the diet to be 66 percent minnows and suckers, 27 percent crayfishes, and 7 percent miscellaneous things such as fragments of vegetation, large aquatic beetles — and a *snail*. Similar studies done in New York, Pennsylvania and the Carolinas

have turned up similar eating habits.

In Minnesota fishermen were complaining that their trout waters were being damaged by a local's pet otters. The fishermen haled the otter owner into court on charges of letting his pet otters catch fish in northwoods trout streams. There, in court, the otter owner showed a movie in which otters were turned loose in a tank containing trout and crayfishes. The otters completely ignored the trout but fed avidly on the crayfishes. The case was dismissed.

Another curious note is that the size of the fish taken by otters remains relatively small. It was found from these studies that trout ranged 2- $\frac{3}{4}$ to 9 inches, with an average of 4- $\frac{1}{2}$ inches; bullhead averaged about 5 inches; pike averaged about 10 inches; perch were all under 5 inches; bass and sunfish ranged from 2 to 4 inches; most suckers were under 5 inches; minnows were commonly 1- $\frac{1}{2}$ to 5 inches; mud minnows averaged less than 3 inches; and the muddlers averaged about 2- $\frac{1}{2}$ inches.

As can be seen, most of the fishes taken by otters are small, not the large ones often imagined by otter haters. The most important single fish species was the mud minnows. The most important nonfish species was the crayfish. One peculiar find showed that blueberries were often utilized as a food source in late summer and early fall. Otters also control snapping turtle populations and have been

known to feed on both poisonous and nonpoisonous snakes.

Apparently the otter captures fish, at least to a certain extent, in proportion to their abundance in the waters. Thus, the relatively numerous forage fishes bear the brunt of the attack, whereas the normally less abundant gamefishes are not taken so frequently. Fishes are probably captured by the otter in inverse proportion to their swimming ability. Hence, the slower swimming mud minnows and sticklebacks are captured more frequently than the faster swimming trout.

The predatory habits of the otter may actually benefit trout by removing the less desirable competitive and "noxious" fishes from trout waters. Carp, suckers, chubs, catfish and even crayfish have been known to feed on gamefish eggs. Sunfish, bluegills and perch are notorious for destroying large numbers of bass and pickerel fry yearly. The otter helps control these species by allowing gamefish eggs to hatch and the fry to obtain catchable size.

The feeding habits of otters on small fishes suggest interesting and healthful relationships not only between otters and gamefishes, but between otters and all life of the waterways in which they live. Ecologists consider them to be indispensable to the welfare of the gamefishes and of helping to balance the communities of life in streams, lakes and ponds.



“*fishin’ . . . eel thyself!*”

by Arthur J. Michaels

While worm fishing in the Delaware River one September evening, I got a bite and anxiously reeled in the line, watching my pulsating fishing rod. But my excited smile quickly turned to a grimace of disgust and disappointment as a two-foot eel writhed and twisted on the end of my line.

“Yech!” I shrieked. “Cut the line! Don’t touch it!”

The twining creature fell back into the water on my cut line and I breathed a sigh of relief.

Years later, I reviewed the incident. “What an introduction to eel fishing!” I thought. “Not a bad fight though . . . felt like a nice-sized trout,

too. . . .” Reliving the episode, my dread and disgust were becoming a level-headed reconsideration.

“What if I’d kept that eel?” I wondered. “Do they come bigger and fight even harder? Are they easily cleaned and good to eat? Could the eel be the *favorite* of some fishermen?”

In the same manner that people become devout bluefish enthusiasts and dyed-in-the-wool trout fanatics, I was becoming an eel fishing convert.

But why did I, like many other fishermen, discover eel fishing by accident? Why is the eel not honored as a “gamefish”? And just what is it about eels that puts anglers off?

It seems as if everything about the

American eel puts fishermen off. For one thing, the eel has a long snakelike, cylindrical body. Writhing, twisting and curling on the end of a line, an eel doesn’t look anything like a gamefish . . . at least not like a bass, a pike, or a bluefish. It’s lifecycle is also one of the most unbelievable and seemingly irrational tales of nature ever told. Consider the eel’s life cycle and see for yourself.

In late summer or fall, female eels swim for the ocean from their inland habitats in coastal rivers. The color on their sides and bellies changes from green or brown to a silvery-white sheen and they become plump with an extra layer of fat along their bodies.

These changes herald their spawning migration to the ocean. They are between eight and fifteen years old.

Fishermen often call female eels "silver eels" at this time. As they reach the lower portions of rivers in coastal areas, male eels join them for a strange passage. Their destination is the area between Puerto Rico and Bermuda called the Sargasso Sea. Here, beneath a wilderness of seaweed in about 1500 feet of water, the eels spawn. After spawning, the adults die, never to return to the North American Coast.

Their fruit, the millions of eggs that hatch, look nothing like eels. Flat and transparent like glass, these newborn eels are called *leptocephali*, the larval stage of the eel's development. The word "*leptocephalus*" comes from two Greek words which together mean "thin head."

Since they do not have the power to swim, they drift to the North American coast at the mercy of the favorable Gulf Stream and North Atlantic currents. During their year-long float to North America, the *leptocephali* develop long pin-like teeth and feed on plankton.

In addition to their own feeding, the *leptocephali* are also fed upon. Migrating salmon feast on the larval eels, and of course, young eels are a favorite food to striped bass. In fact, clear surgical tubing, used in salt water casting and trolling rigs, imitates the transparent *leptocephali*, and towards the end of the striped bass season on the New England and middle Atlantic coasts, a rigged eel is a favorite striped bass bait.

Some *leptocephali* grow as large as eight inches, but as they reach the coastal regions of North America, they gradually shrink in size. Taking on the adult's characteristic brown or green color and growing cylindrical, they now resemble small eels and are called "elvers." Scientists believe that this great change of the *leptocephali* is triggered by the influence of fresh water as the larval eels near coastal rivers, like the Delaware. Having the ability to swim freely for the first time, the elvers ascend the coastal rivers and tidal estuaries of North America's East Coast.

Male eels, which stop growing after about five years, remain close to the ocean in the brackish parts of coastal rivers. Male eels usually run no bigger

than two feet in length. But female eels, which grow larger over a longer period of time travel further inland and run as big as three or four feet. After seven years, the female eels grow scales which are small, round, and deeply embedded in the skin. Some females travel as far as 2000 miles from their Sargasso Sea birthplace to a freshwater inland river environment.

Now, any angler in his right mind who's just heard a story like this can't be blamed for choosing bass or trout fishing over angling for a species like eel. In fact, any fisherman who elects beer drinking over eel fishing after hearing a tale like this is probably justified! It sounds crazy because, even though eels were caught and eaten in the days of yore, the secrets of their propagation and genesis remained hidden.

For one thing, eels bearing ripe eggs were never caught and for this reason it was believed for many centuries that eels did not reproduce in the same manner as other fish. The accepted conclusion of Aristotle's time, around 350 B.C., was that eels generated spontaneously from mud and the Middle Ages produced a similar belief that eels grew from horsehair dropped in water.

European naturalists of the Eighteenth and Nineteenth Centuries began to uncover more and more clues to the mystery of the eel's life cycle. However, their discoveries were based on scientific methods rather than abiogenetic beliefs — beliefs that eels sprang up from inanimate objects.

In the 1770's, the Italian scientist Mondrini proved that eels reproduce in the same fashion as other fish by his discovering eel eggs. And in the 1860's, English naturalists observed the *leptocephali* in fish tanks changing into elvers, thus disproving the prevailing belief that the *leptocephali* were a separate species of transparent ocean fish.

Finally, Johannes Schmidt, a Danish ichthyologist, discovered the spawning grounds of both the American Eel and the European Eel. He began his search for the *leptocephali* in the Mediterranean Sea in 1904 by retracing the journey of the European Eel's *leptocephalus* larvae. Following the path of smaller and smaller larvae, Schmidt's quest ended

in 1922 — eighteen years and 40,000 miles later when he discovered newly hatched eel larvae in the Sargasso Sea area.

Schmidt's research is considered to be the landmark of scientific eel study upon which present-day studies are based. He is credited with answering the riddle of the eel's genesis, even though his objective evidence seemed just as preposterous as the evidence for an eel springing from mud or horsehair!

Still, there are unanswered questions. How do the European Eels know to drift east? How do the American Eels know to drift west? And how do the *leptocephalus* larvae of both species know exactly when to change into elvers? Today, ichthyologists, fisheries biologists, and zoologists are tackling these questions. But do these unanswered questions about the American Eel's life cycle contribute to the turn-off of many fishermen to eel fishing?

Surely they do. In fact, these same unanswered questions often form the basis of wild stories, misinformation, and inaccurate statements — especially when the fuel for such inaccuracies is an unbelievable story like the life cycle of the American Eel! Here then are some of the myths and facts about eels and eel fishing that Delaware River anglers ought to know.

MYTH: The eel family is very small with only a few species.

FACT: There are 350 species of eels in twenty-five families around the world. This includes sixteen freshwater species.

MYTH: Eels are not "fish" as we know them.

FACT: Even though eels don't look at all like a bass or a trout, they are fish in every sense of the word. Eels have backbones, breathe through gills, and are cold-blooded just like fish we're most familiar with. And like many other fish species, eels are nocturnal, preferring to feed at night. Five of the 350 species have scales, too. The American Eel is one of those species.

The snakelike appearance of the eel deceives many anglers. All eels are classified in the scientific order *Apodes*, which in Latin means, "without feet." Of course, no fish has feet, but most do have pelvic fins where feet would probably be. Eels

lack pelvic fins and are therefore "without feet." Eels have no ventral fins either, and both the dorsal and anal fins (back and belly fins) run continuous with the tail fin.

MYTH: Like the lamprey eel, the eel's mouth structure and "face" are not those of fish.

FACT: The American eel has a pointed head and, built like a large-mouth bass or striped bass, the eel's mouth opens wide to the middle of the eye or beyond.

On the other hand, the lamprey has no jaw. It has a round mouth with many small, sharp teeth. It attaches itself to other fish and sucks out its victim's blood. The lamprey, or "lamprey eel" as it's often misnamed, is an eel-like fish, but it is not a true eel.

MYTH: The American eel is a rare find in the Delaware River.

FACT: The American eel, *Anguilla rostrata*, ranged plentifully from Greenland southward along the North American coast to the Gulf of Mexico. The American eel is found in lakes, ponds, rivers, streams and tidal estuaries, and they can be found in many central states of the Mississippi drainage.

There is a sizable, natural eel population in the Delaware River and, with many stockings of elvers over the past twenty years, the Susquehanna River boasts eel action, too.

MYTH: Eels are difficult to catch.

FACT: Eels are omnivorous fish, like bluefish or striped bass. This means that when they're feeding, they'll attack almost anything that moves. The variety of baits to use is extensive and the eel is a willing biter — good news to fishermen!

One of the best ways to catch an eel in tidal waters of the Delaware, for instance, is to rig a light action salt water surf-casting rod with a traditional surf-casting, fish-finding rig and arm your rig with a one-ounce sinker and a sand worm.

In the freshwater, upper reaches of the Delaware, bottom fishing is the winning ticket, and fishing at night puts the odds further in your favor. Eight-pound test line is a good all-around choice for a medium-action spinning tackle outfit. Rig a worm to a #6 bait-holding hook and clamp a one-

quarter to one-half ounce sinker twelve inches above the hook. Wherever you fish for eels, cast your rig, sit down and wait for a bite.

MYTH: When they are biting, eels usually run very small.

FACT: Surely there are small eels; but, most eels run from one to three feet in length. A lunker eel runs four feet and can weigh nearly nine pounds. But, even with a three-foot lunker eel on your line, it's often difficult to say exactly who's doing the fishing and who's being caught!

MYTH: You can only catch eels in August, or during hot spells.

FACT: The feeding habits of eels are like those of other fish. You can have good eel action from April through November, but September, *right now*, and October are the best times to fish for eels.

MYTH: Eels are not good to eat.

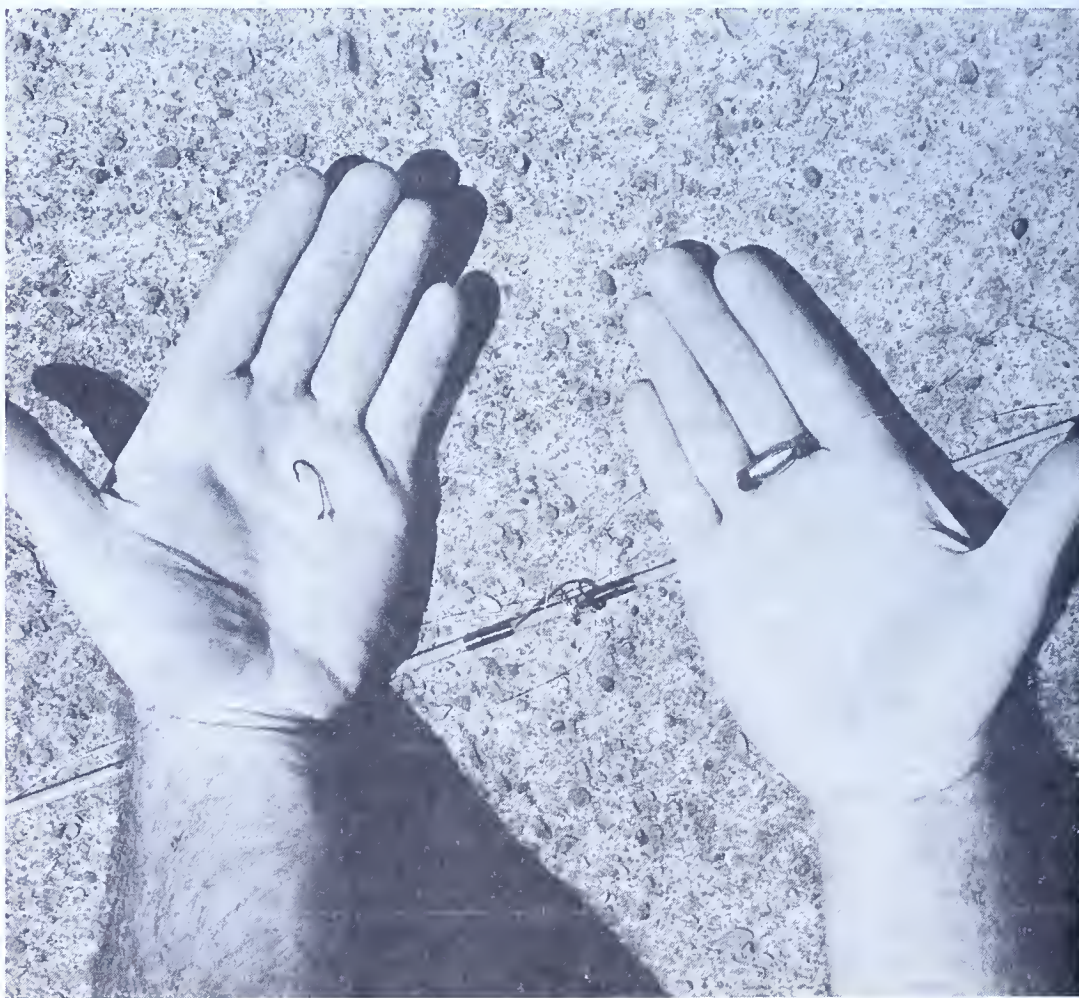
FACT: Only Americans tend to disfavor the eel at the dinner table.

Where eels are plentiful in other parts of the world, they are a highly prized food fish. In Europe and Japan, for example, dining room tables abound with fresh, pickled, fried, baked, jellied, or smoked eels. In those countries, the demand for eels often surpasses the supply. Each year, catches of European commercial fishermen exceed 17,000 tons, and in Japan, 20,000 tons of eels are caught annually by commercial fishermen.

In general though, America is not a fish-eating country. With over 200 different kinds of fish available at New York's Fulton Street Fish Market, Americans seem to stick to a few familiar species. But the eel surely can compete with any serving of flounder, bass, trout, or bluefish. (See page 4, "Meals from the Creel.")

MYTH: Eels are dangerous on a hook and line.

FACT: The danger of eel fishing is that, while fishing for other species and catching an eel by accident, you could become an eel fishing convert!



A freshwater eel fishing rig is easy to make: tie a #6 bait-holding hook to the end of your line and fix a quarter-ounce sinker a foot above hook. Pack a glove or rag in the tackle box when eel fishing—old-timers used a woolen sock. Angler on opposite page uses rag to subdue squirming eel



The "BIG 3" Flies for Trout

by C. L. Peters

There are so many patterns of trout flies and lures on the market today that one might well be confused when looking at the array on display in tackle shops. It is difficult for the novice to sort out the patterns that consistently produce results.

It may be well to remember that we have three distinct species of flies in most of our eastern streams that make up the bulk of the trout's food. These three species consist of the mayflies, caddis and stone flies. Whether one intends to indulge in wet fly, nymph or dry fly fishing, imitations of these three will cover the average-sized trout's diet.

It is true that outsized trout, especially browns, become cannibalistic and feed largely on baitfishes and are mostly nocturnal. But, for the fisherman who wants to take trout consistently the nymphal and pupal states of the big three are the real prescription.

It is estimated that 90 percent of a trout's food comes from the bottom of the stream and this consists of the nymphal and pupal stages of what later becomes mayflies, caddis and stone flies. It is only reasonable to assume that trout must obtain their food from the element in which they live and if they don't find it free-moving they grub among the rocks, gravel, detritus and silt. So, it is only natural that nymphs and pupae consistently take trout when other methods fail.

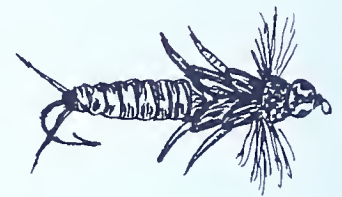
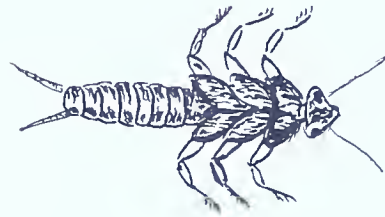
A cursory look at the caddis flies reveals that we can cover most of the pupal stages in most Pennsylvania waters with imitations tied in cream, tan, green and charcoal colors. They range in sizes from specimens tied on hook sizes 12 to 18. The nice part about the caddis is that they appear in the winged stages at intervals during the entire season and for weeks prior to that time the pupal stages may be fished successfully.

It is only during the past decade that anglers have become really caddis conscious. Prior to that time the emphasis was on mayflies. Our heritage of angling literature from England stressed wet fly fishing. Our early forebears soon discovered that wet fly fishing was not the answer to imitating the nymphal stages of the

various flies and thus the imitation nymph was born. This revelation has served the fisherman well. But, alas, many of our mayflies are but a memory on some of our streams and are fast disappearing on others due to siltation and pollution. The mayflies are a very delicate insect and are not able to survive these conditions. The caddis and stone flies seem to be able to withstand these conditions better and now form a prominent place in the trout's diet. In sampling some of our local streams I find the caddis percentage of subsurface life very

high. I also noted that some of the trout that I caught had their noses bruised from foraging among the rocks and gravel for food. A further stomach examination revealed that many tiny green caddisworms were recently consumed. Going back to the stream I found submerged rocks literally covered with the tiny worms.

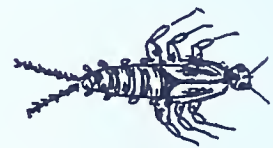
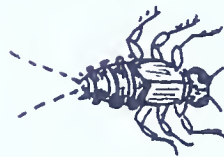
The Grannom, a rather large caddis, usually arises from Penns Creek as early as April 18. It is a very heavy hatch and is now considered one of the major events of the season. Later in the season other caddis appear



STONE FLY NYMPH



CADDIS PUPA



MAYFLY NYMPHS

C.L.P.-78



MAYFLY



CADDIS



STONE FLY

regularly when there are no mayflies abroad.

The nymph of the stone fly is equally challenging and of top importance to the angler. I have listed 10 stone fly species on Penns Creek and there are many others. Starting with the tiny black early season stone fly, they range in size and color up to the large yellow (*Perla capitata*) which is the meat and potatoes of a trout's diet. This is a big juicy mouthful and the trout love them. Many anglers net the live nymphs of this fly from shallow riffles for bait. This is to be frowned on lest they, too, become a rarity. They collect the live nymph and fish it all season until they finally hatch into the mature insect in late June and July. A good imitation of this nymph will take trout consistently, and there are some very good imitations on the market. Look for it to be about one and one-eighth inches long and tied on a "number" 10 - 3× long shank hook. Unless you are using a sinking tip line it should be weighted to get it down where the trout are feeding.

I tie this nymph with a woven body, with yellow underneath and brown on top, but I have seen some excellent specimens tied with the same colors but by the time-honored method of nymph structure.

If I were to choose one nymph for that type of fishing, it would be *Perla capitata*. Trout will sometimes take it to the exclusion of any other they may be feeding on at the time. First, it is big, easy to fish, highly visible, and a big meaty mouthful that the trout love. The consistent stone fly nymph fisherman takes trout regularly regardless of other hatches. I realize that the above statements will raise some brows but I know some fellows who fish this nymph exclusively, regardless of mayfly hatches and they do catch their quota of trout.

Sometimes I feel that too much emphasis is placed on mayflies and dry fly fishing. We are brainwashed with catalogs of flies, many of which have their counterparts in other countries. Actually, we have only about a dozen mayflies of any consequence that stir the trout into a feeding frenzy on the surface. I think Art Flick said it well when he wrote his little book "*Streamside Guide*."

I have kept a meticulous diary of the dates of emergence of our



The author with a 24-inch, 6-pound 9-ounce rainbow he took from Dauphin County's Stoney Creek on his own pattern of the Woven Stone Fly Nymph.

mayflies in Pennsylvania on such streams as Penns Creek, the Yellow Breeches, Pine Creek, and others, and I can find only about ten consistent producers of heavy hatches. Ironically, a gold-ribbed Hare's Ear tied in a dry fly version, or an Adams, tied spent wing will entice trout to strike about 40 percent of the time — unless there is a very heavy hatch of a particular fly at the time. No one is quite sure exactly what either of these flies represents, unless they are a composite that represents several of the mayflies or perhaps a caddis. One thing is for sure: the dry fly angler who carries these two flies in several sizes is well-insulated against failure to take trout.

For many years I sat patiently on the bank waiting for a hatch to start. Then I became aware of the fact that

I was wasting valuable fishing time when a nymph should be presented, corresponding to the anticipated hatch. There is a certain satisfaction to fishing to the rise and taking trout on a floating fly that somehow we fail to overcome after once tasting the sweetness of it. It is the challenge of the exact placement of the fly, defeating the old demon, drag, that every fly caster encounters, and the coordination to strike at the proper moment.

Large trout taken on a wet fly are an exception rather than the rule except at times when such hatches as the large *E. Guttulata*, the Green Drake, are on the water. Then, sometimes, heavy trout lose all caution and forget all the lessons they learned concerning concealment. The real reason for going fishing is to catch trout — big trout, if possible. It may

add to your ego to be able to throw a variety of casts designed to reach trout in difficult positions, to display your skill at averting a drag in your line and the placement of your fly in the exact feeding lane of a trout. It may boost your morale to tell your

friends that you took the limit of nice trout on dry flies; but, the majority are taken beneath the surface.

Whether your bag of tricks is fishing Caddis, Stone Flies or Mayflies, remember, there are the big three in the trout's dining room beneath the

surface of the water, in the nymphal or pupal form, and fish accordingly. If the trout want the adolescent stages of the flies, give it to them. And, if they prefer the adult stage of winged fly, remember, "*The customer is always right,*" so switch to dry flies.

Make your own . . . **FLY-TYING WAX**

by Tom Watson

Look in most books on fly tying, be it old or new, and one of the fundamental tools of the trade is wax. Some books even give recipes for their wax. There is no question in my mind that the merits of wax in fly tying are numerous. I've talked to many people, though, who don't use it and feel it is an unnecessary bother in their fly-tying process. Others use it occasionally, not really knowing and understanding its full potential as a major process in the tying of a durable, long lasting fly. Very few use it on each and every fly that goes between the jaws of their vise.

Please note that when I talk about wax and waxed thread, I am *not* referring to prewaxed thread such as the excellent thread put out by Herb Howard. This thread may be waxed but not in the truest form of the word. Herb Howard's, and anybody else's prewaxed thread, doesn't have the true adhesive qualities found in some of the "tacky" waxes on today's market.

The basic ingredient in any functional fly-tying wax that I've seen or read about is beeswax. When this is mixed with other ingredients, tacky waxes can be created. Although some prewaxed threads may have been originally waxed with a tacky wax, exposure to the air has dried the wax out, leaving basically a worthless, nonfunctional fly-tying wax. For this reason, tacky wax must be applied directly to the tying thread just before tying your fly.

As I stated earlier, the merits of tacky wax in fly tying are numerous. Below are some reasons that have made this wax a permanent fixture on my fly tying desk.

1. Wax makes the dubbing of bodies much easier, as well as making the bodies much stronger. We've all struggled to dub seal's fur or fur with many guard hairs. Tacky wax applied to your thread gives the thread an adhesive quality that binds any dubbing to it, making it easier to spin the fur or synthetic so it will completely encompass the thread, much like the synthetic coating does around the string core in today's fly lines. This will help create a body that is virtually indestructible.

2. Wax increases the life of flies, thus saving money on materials; and, more importantly, saving on hard to get materials that before long no amount of money will buy. Any material, whether it be the fragile cut wing on a dry fly, the wingcase on a nymph, or deer tail on a big bucktail streamer, will stay in place much more securely and keep from slipping when tied in with waxed thread. Also, one step in tying that is standard procedure for me on any fly I tie is to completely cover the hook's shank with waxed thread. This waxed thread base will help keep the body and any other part from spinning around the hook. And one more thing, after whip finishing smaller flies you often find it difficult to apply head cement without it running into the fly's body, wings, etc. With waxed thread you needn't bother to even unscrew the top of your cement. After whip finishing, your wax coated thread will be very secure with the wax doing all the binding necessary.

3. Wax can be used as a softening agent to rough, dry fingers which can fray your tying thread. A little on the fingers can eliminate any dryness or

slickness sometimes found on our fingers before we sit down at the vise. (Too much wax, though, leaves your fingers sticky which is not conducive to any fly-tying process.)

Here is a process for making an excellent wax for those fly tyers who are interested in making their own. It was given to me by an old "old-timer" who has used it for over forty years. This wax has all the qualities of a tacky wax, yet it leaves your fingers free of any stickiness after using it. Some tacky waxes leave your hands sticky after you touch it, making the handling of materials as you tie very difficult. This wax seems to "evaporate" from your fingers after touching it, leaving enough nonsticky wax on them to help you do a better job. I never fail to rub a little into my fingers before each tying session.

INGREDIENTS: beeswax, rosin, turpentine, pot or kettle, tin can, paper or styrofoam cups, stirrer.

1. Put two parts beeswax to one part rosin (check your local drug store or hardware store), along with a "splash" of turpentine, into the tin can. (The turpentine acts as a softening agent. If after you have finished making your wax you find that it is too hard, simply reheat it and add more turpentine.) Also, punch in one edge of the can to make a pouring spout.

2. Pour some water into the pot or kettle and into this place the can containing the ingredients. (This is just a homemade doubleboiler.)

3. Heat the ingredients and thoroughly stir them until they melt together. (Be careful because the ingredients are flammable. Use a low flame or a medium setting on an electric stove.)

4. After they have melted together and have slightly cooled, pour the warm wax into the paper or styrofoam cups.

5. After it completely cools, simply take a small piece from the cup, roll it between your hands into a ball, place it on a small cloth pad and you're ready for business.



Well off the beaten path, the author sets about to prove that small Pennsylvania streams do have large trout.

Small Streams . . . Small Trout?

by Frederic Doyle

After threading a small minnow on the leader with a split-eyed darning needle and, sliding the bait down to a No. 12 burr hook, I approached the hole with special caution. Instinctively, I knew it was the holding place of an unusual trout. The hole was overshadowed by a large elm. Below the overhanging branches its tangled black roots were outlined in the clear water, thin medusan tentacles ready to snare lines and leaders.

Standing back of a tree trunk I dropped the minnow into the water just below a log which spanned the stream. A streak of gold flashed in the September sunlight. The water boiled. I was fast to the ultimate trout and I wanted desperately to land it, not to kill it, but land it.

At the moment all I could do was to hold on . . . keep it from the web of roots. How long I held on, checking the short runs and shallow soundings I don't know. Regaining consciousness, I called to Leah Shaffer, who accompanied me on this expedition with my camera, to "Shoot! Get as many pictures as you can!"

We had come a long way to get these pictures. A mile or more from the paved highway down an old log road. Then another mile or more along a mountain stream well off the beaten path. We tramped through buck laurel and knee-high ferns with green briars ripping at our legs. Red squirrels chattered, scolding us for intruding upon their territory while kingfishers flashed by with their rau-

cous warnings.

Occasionally we stopped to try for small trout in the riffles or shallow pools; catching several brook trout, we released them to grow up. Others raised welts on the surface of shallow pools as they darted for cover in deeper water or sheltering rocks and logs. I was surprised to hook several small brown trout which were firm and lively — ample evidence that the browns were reproducing in the small streams along with the brook trout.

While the brown trout were at the peak of perfection, fat and firm, the brook trout were thinner. Izaak Walton observed, "*that they (trout) be in their perfection in the month of May and decline with the Buck,*" that is with the coming of winter. He



Author's companion, Leah Shaffer, takes time out from her photo duties to try her hand on a secluded stream.

neglected to say just what kind of trout.

Twice before I had come to this mountain stream during warm September weather. And twice before I had caught some unusually large trout from this small mountain stream. One was a native brook trout thirteen inches long and, on another day, a fourteen-inch brown trout. Incidentally, the brown trout spewed fourth a handful of Japanese beetles as I landed it. A point to remember next winter when fly-tying time arrives.

But I was after the ultimate trout in a small stream. And I wanted proof. And so it was that I bribed Leah Shaffer, a neighbor of mine, to accompany me with my camera.

I related to her the poet's dream of the ferny forest glades, the babbling brooks, the whispering pines and the timid creatures of the wild. The perfume of the open meadows with cows grazing contentedly in verdant pastures . . . the far-off tinkle of a bell on the distant hillside where sheep cropped the short grasses. After quoting Omar's "A Jug of Wine, a Loaf of Bread — and Thou Beside me singing in the Wilderness — Oh . . . Paradise

"Nor did I mention . . . the cattle that came to stare . . . inquisitively."



. . .!" she agreed. She also agreed to furnish the "Loaf of Bread" in the form of sandwiches for lunch. And thus I sat back smugly and made other preparations for the day.

I had not mentioned the little green frogs that catapulted from under our feet and plopped with startling sud-

denness into the water as we squished along the soggy bank. Nor did I mention the water snakes that dropped from the bushes into the stream and slithered to safety . . . nor the cattle that *came to us* to stare and sniff inquisitively. Neither did I mention the groundhog holes that pitted the bank

and invited tragedy. There were also nettles that stung like bees, gnats that got into our eyes and mosquitoes that unerringly harpooned our bare necks!

I had to prove a point. There were large trout in small mountain streams! Especially in early autumn. Where do they come from? I have fished these streams in the spring and early summer with moderate success. Average-sized trout seven to nine inches long. But in the autumn big trout move in. Do they move up from bigger water during the "dog days" to cooler spring water? Or is it the spawning instinct that brings them to these trickling streams?

Where they come from, I don't know, but now I had hooked one. It was the *ultimate* trout. At least eighteen inches long; heavy-bodied, and beautifully colored ... red and gold.

My heart began to beat again as I watched the trout's last feeble struggle. I too was gasping for breath.

"I'm going to release this one," I called to Leah, "but first you take the rod and I'll take the camera and get some close-up pictures."

But in the exchange I let the line fall slack. The rod snapped up, the big brown trout waved its fins and swam slowly back to the tangle of roots ... safely home!

I breathed a sigh of relief — a relief tinged with disappointment. I did want some close-up pictures; but, I

had proved my point: there are bigger trout than most of us suspect in small Pennsylvania mountain streams.

A red-shouldered hawk circled low over the tree tops echoing its piercing whistle as we gathered our gear

together and started on the long trek toward the car. The bogs, snakes, the mosquitoes, all forgotten ... blotted out by the memory of a perfect September picnic day ... and the *ultimate* trout.

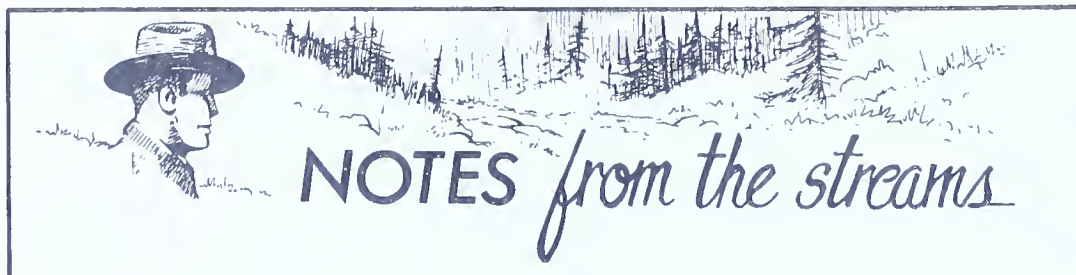


"The big trout waved its fins and swam slowly back to the tangle of roots ...

I had proved my point: there are bigger trout than most of us suspect in small Pennsylvania mountain streams."

Below: another trout from another day and another hike to a secluded mountain stream abandoned in the fall.





EXTRA EFFORT

The winter of 1977-78 left some of the stream banks in Somerset County under two to three feet of snow when preseason trout stocking time arrived. This did not deter the enthusiasm of the sportsmen who turned out as usual to lend a hand. The going was tough and exhausting at times as they waded through the hip-deep drifts.

We owe a special thanks to these people who got the job done!

Bud Flyte
Waterways Patrolman
Somerset County

FIELD GOALS, ANYONE?

I have witnessed many strange behaviors of anglers but I saw an incident during the Sinnemahoning Sportsmen's Association Fishing Contest that tops them all. About 8 or 10 St. Mary's Fishermen were ice fishing at Stevenson Reservoir and while awaiting action you could not imagine what their pastime was — a football game on the ice — and, *tackle*, at that!

Stan Hastings
Waterways Patrolman
Cameron County

CATCHING ON

On the opening day of trout season along Little Beaver Creek, I noticed several fishermen cleaning up the area of cans and other debris. The landowner had just placed a large drum there and it was soon half-filled. The landowner was very happy to see this and so was I. It's acts like these that keep our streams clean, beautiful and "open" to fishing. Keep up the good work fellas.

Mike Symabala
Deputy Waterways Patrolman
Beaver County

VOLUNTEER FORCE —

On March 25, while patrolling Mahoning Creek, Carbon County, I came across two carloads of members of the Summit

Hill Fishing Association, patrolling the creek also on a voluntary patrol against littering, landowner abuse and early fishing. This club in cooperation with the waterways patrolmen had contacted the landowners, offering cooperation before the season came in, in order to cut down on abuse. This day, in addition to placing small signs indicating the voluntary patrol, they had picked up two large leaf/trash bags full of litter. Let's hope this idea catches on with more clubs to protect their sport. Since then, I have come across another club's sign on another stream in the district indicating voluntary patrol.

F. W. Ohlsen
Waterways Patrolman
Carbon County

ASSORTMENT!

I went fishing after school yesterday, as I do most days, below the fabridam in Sunbury. Now, I've heard of "mixed bag" fishing excursions but I never had one like this. From 4:00 p.m. to about 7:00 p.m. I caught the following:

- 1 brook trout
- 1 brown trout
- 1 rainbow trout
- 4 walleyes (not legal size)
- 6 smallmouths (out of season)
- 1 largemouth (out of season)
- 1 musky (short)
- 15 rock bass (delicious)
- 1 pumpkinseed (8½")
- 1 crappie (equally delicious)
- 1 fallfish (white chub?)

I realize this is unusual but not really that unusual. Many times I have taken a limit of several varieties of fish from the same spot in this river. All of the fish were taken on striper minnows and *I never moved my feet* other than to net fish and get bait.

Bill Huffnagle
Deputy Waterways Patrolman
Columbia/Mountour Counties

SAD, INDEED!

Today I witnessed a sad occurrence while on foot patrol along Muddy Creek near the village of Laurel. A mallard duck had become entangled in a length of monofilament fishing line and died due to exhaustion and/or drowning. I could not

help but wonder if this length of line got there as a result of someone being snagged on an obstacle and having to break their line or perhaps the result of a tangle that had been broken off and carelessly discarded. If the reason was the first, it's unfortunate, if the second, it's inexcusable, and, I might add, *littering*.

Ronald L. Hoffman
Waterways Patrolman
S/York County

SERENDIPITY?

Bill Rapp of Butler dropped his children off to trout fish on opening day. While waiting for them he and another man cleaned up a pile of litter left by overnight beer drinkers along the stream. In the process each man found a \$5.00 bill amongst the litter. A most deserving reward! Thank you, Gentlemen!

Eugene Scobel
Waterways Patrolman
Butler County

COST COMPARISONS —

This year the Pennsylvania Fish Commission will stock 5 million trout, many millions of warmwater fishes and provide a myriad of services to the public. Yet it seems that I often hear complaints about the price of a fishing license or the price of our magazine. Well, for those of you doubters, here are a few facts and figures to ponder:

A single copy of the *Angler* magazine costs 30 cents. So does a *single* can of soda pop, a *single* draft beer, a *single* cup of coffee. A *single* month of fishing costs 65 cents. So does a *single* pack of cigarettes, a *single* piece of pie or a *single* gallon of gasoline.

A year of the *Angler* costs \$3.00. About the same as a single four-ounce jar of instant coffee, the admittance to a *single* movie, a half-case of beer, or a *single* copy of most monthly girlie publications.

A year of fishing costs \$7.50 — the price of a movie for two, dinner for one, a large pizza with everything on it, or half of one bag of groceries.

After reading this over, how can you most enjoy your money?

Robert Lynn Steiner
Waterways Patrolman
S/Luzerne County

A LESSON WELL-LEARNED!

During pretrout season patrol, I observed two individuals along a stocked trout stream. Upon approaching them, I could see that they were juveniles (approximately 11 years old) and they had

monofilament line and hooks tied to sticks. They both were quite startled with my abrupt approach. One of the youngsters managed to make it back to the stream bank without incident but the other had to make his way over a log jam. In his excitement, he slipped and was hanging onto a log, becoming quite wet with the cold water. He was subsequently rescued by his buddy.

The two badly shaken boys were informed of their wrongdoing but I think the lesson was learned prior to my uttering one word. They both gave me their word that it would never happen again.

Bud Flyte
Waterways Patrolman
Somerset County

NO TRICKERY!

While working at the Outdoor Expo Show at Dorney Park this year, a rather amusing incident occurred with respect to our live fish exhibit. We had on display some beautiful panfish including a 14-inch yellow perch, a hefty 12-inch bluegill, and a 10½-inch pumpkinseed. We were fortunate to obtain these fish from a farm pond during a recent ice fishing trip. As the show progressed we received many fine comments on their size and condition. There were a few fishermen, however, who were skeptical about the fishes' size. One gentleman believed he had a possible explanation for their amazing size. He approached Deputy Stanley Long and asked him if we had installed a magnifying glass in front of the viewing window in order to enlarge the appearance of the fish!

Thomas Kamerzel
Deputy Waterways Patrolman
Lehigh County

NO THANKS!

Deputy Jack McMillan, my faithful dog "Fang," and I were patrolling the Upper Hereford Manor Lake the second day of spring trout season when a small boy about three years old spotted the dog. Immediately, the tot came toward Fang, bent down and dropped something in front of her nose. Thinking it was the usual "beef jerky" or "slim jim" she's accustomed to getting, Fang gave the offering a quick sniff. The dog looked up at the lad, turned to me with a look of "He's putting me on!" over her face. I walked over to examine the distasteful morsel and there lay a big, fat, juicy night crawler! The boy ran to his mother rather proud he had accomplished his mission. Mom smiled and asked, "Wouldn't he eat it?"

Don Parrish
Waterways Patrolman
Beaver County

Bait Up

(continued from page 7.)

BEES, ANTS, & WASPS

The order Hymenoptera contains the bees, ants and wasps. Adult bees and wasps are excellent bait. Net them on flowers or put out rotten fruit or a shallow pan of honey to attract them. These insects can be killed by placing them in a jar with cotton saturated with ether, chloroform, or by simply dumping them into a jar of alcohol. They can be preserved indefinitely by drying or storage in 70% alcohol (concentrations greater than 70% tend to make them brittle). To soften dried specimens, place them in a jar with some damp paper or cotton and leave them overnight.

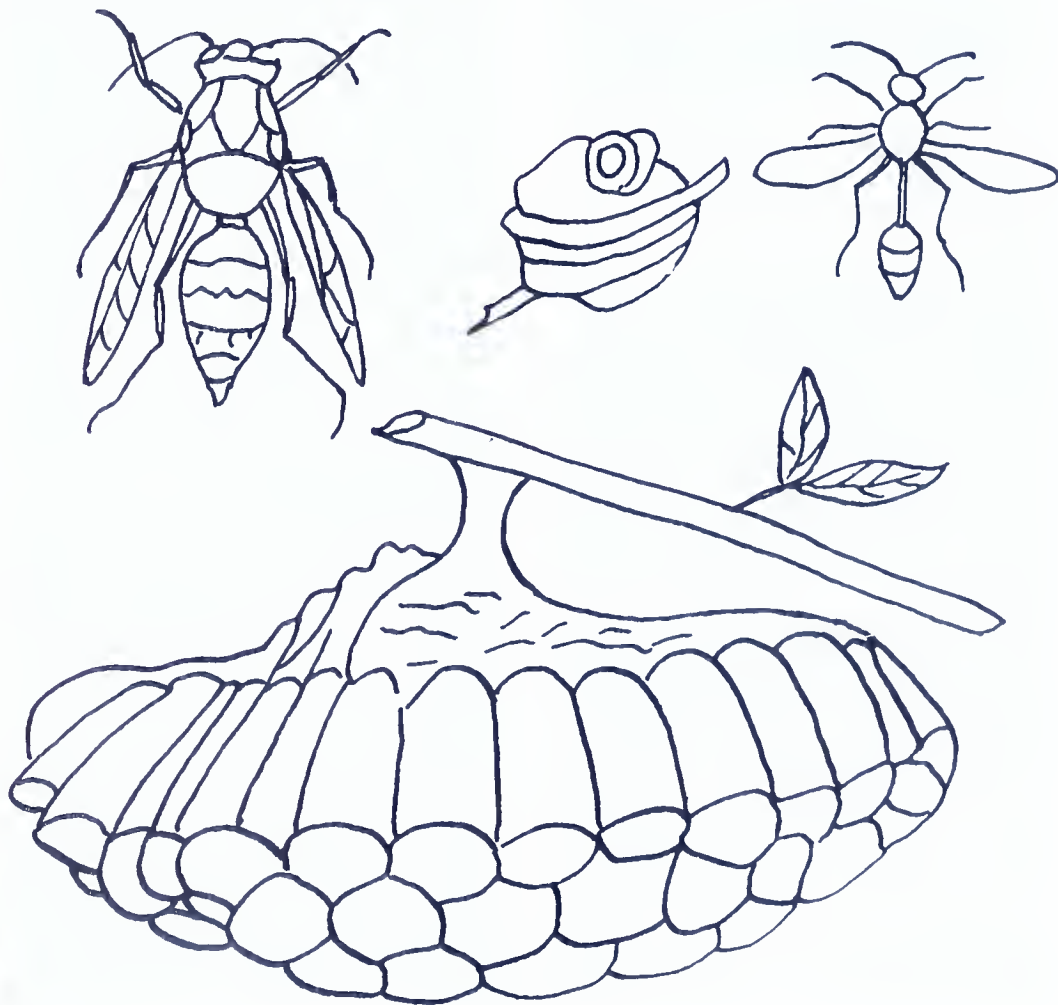
The larvae of bees and wasps are also good bait. Collect them by breaking into the nest and stealing the comb that contains them; but, first you have to knock out the adults. This is done by using a smoker; a combination bellows and smudge pot that puts out

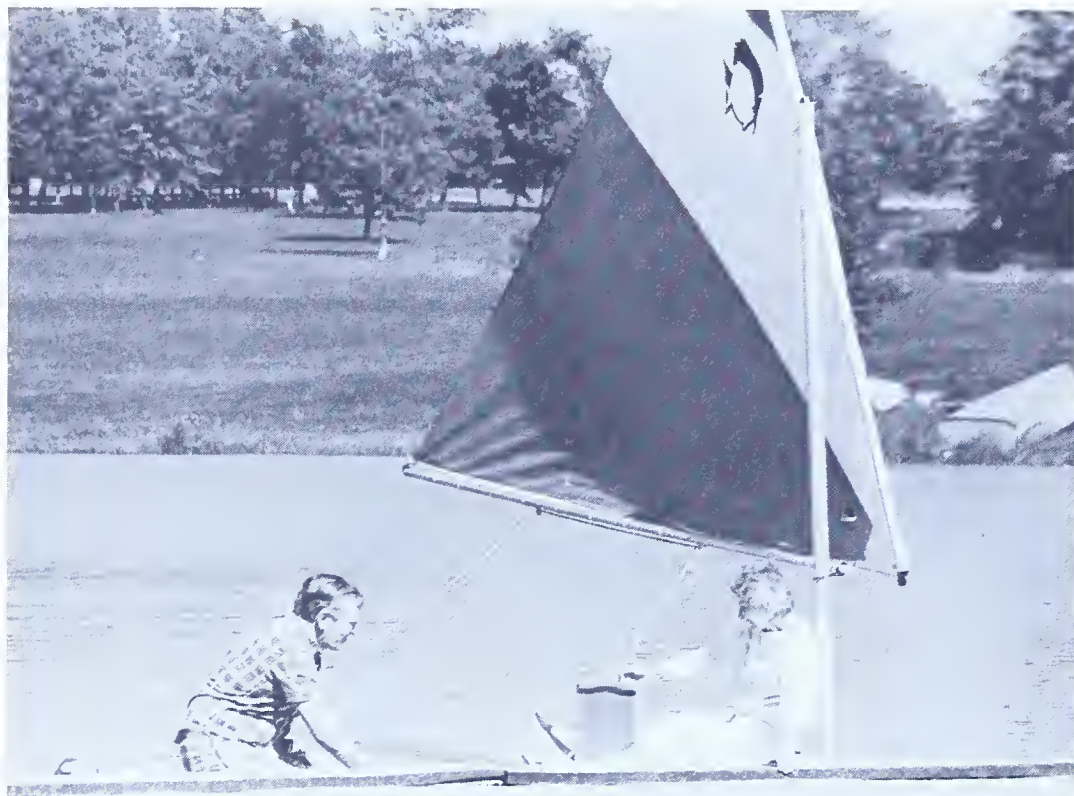
a thick, black smoke which makes the bees drowsy and nonaggressive. If you can find someone who raises bees, ask them to sell you some larvae.

There is an old fallacy that in the winter you can get wasp larvae out of old paper wasp nests. This is completely ridiculous. In the winter all members of the hive die except the new queens which fly away from the nest and hibernate under the bark of trees or in buildings. You can, however, get larvae and pupae out of mud dauber nests. Search for them under the eaves of old buildings and on the underside of bridges. In late fall you will most often find larvae, while in winter, pupae will predominate. Both of these are excellent bait for ice fishing.

Many solitary wasps have a larval stage that lives in wood. They and their pupae will be found when splitting logs from dead or diseased trees. They keep best in the refrigerator. Fish the larvae and pupae as you would grubs and fish the adults on the surface or just off the bottom.

The large black queen carpenter ants, most often seen in the fall, are excellent trout and panfish bait. Keep them in a jar in the refrigerator and fish them on a fly rod.





Fall need not spell the end of the boating season. Indeed, you might find some short-sleeve days sprinkled among the cool times.

Ashore & Afloat

by Gene Winters

It seems impossible we are fast approaching the twilight of yet another boating season. Wasn't it only yesterday we were scrambling feverishly to get in that first day on the water? But, even though there are some pretty convincing signs that the summer season is getting shorter each year, many boaters end a season long before need be.

On Labor Day, probably 7 out of 10 small boats are trailered or cartopped home for the last time, slipped under their protective winter covers or backed into the garage or storage shed. The owners walk sadly into their house to sit and await the onslaught of winter. During the vigil, they often, however, can be seen grimacing at each pleasant, comfortable day that sneaks into the fall season . . . days they could have spent on the water.

For those who do not jump so quickly, instead keeping the boat at the ready, playing hide-and-seek with the sun, there are rewards: a scattering of near-ideal days in late September, October and often into mid-November. True, the jump from the bow into the river or lake for a relaxing swim is probably a thing of the past for this year, but the wind and temperature often remains kind for many water activities.

One advantage fall boaters find is simply more room as the great mass of humanity has packed it away for another year. The fall boater finds it easier to uncover an unoccupied solitary cove for some real relaxation. It's easier to cast a line off the bow or stern now that the wall-to-wall boats are gone . . . and the fishing is often fast and furious.

It's also a good time of the year to introduce the family crew to some piloting and experience behind the wheel. There's plenty of room on the water for everyone to develop boat handling skills and learn some basic principles. An understanding that can be very helpful if the family changes to another and, probably larger boat, or when at the helm of a strange boat. A skipper and his crew may get by in ordinary day to day boating but lack the necessary training and expertise to cope with critical situations that may develop. Since much of the boat-

ing during the Memorial Day to Labor Day season is done on carefully hand-picked sunny days, fall often offers a chance to practice under less than ideal conditions. The increasing number of days with higher winds and chop, often accompanied by swifter currents, provides a chance for some excellent "on-the-water" experience in boat handling.

A proper training program involves both the skipper and his crew. The skipper first learns himself what should be done and how, then trains the crew. If the docks are still in at rampside where you boat, this less-crowded time of year is perfect for specialized training. While it may be easier and quicker for the skipper to always bring the boat in alongside the pier or into the slip, he should take the time and have the patience to let the others learn how by doing.

Fall can also be a great time to review or establish on-the-water emergency procedures and run some drills. Although an emergency is an unplanned event, actions to cope with at least foreseeable ones can be pre-planned and rehearsed. Should an emergency develop someday, it will be much less severe and more easily handled if there is a practiced routine ready to instinctively and instantly be set into motion.

"Man overboard" drills are one of the most important. With the water

*Cooler weather has its good points;
so, don a jacket, round up a
pal or two and get in some good fall
boating on uncrowded waterways.*



perhaps already too cool for actually going in the water, any floating device about the size of a head can be used. As soon as the "person" is in the water, the skipper should post a lookout. It's important to keep the overboard person in sight at all times. A crew member should heave a buoyant object, preferably a ring buoy, buoyant vest or cushion, to the person in the water. The skipper or person at the wheel should then practice his turn and return to the overboard person. If you are using a motorboat, never forget you have a churning propeller under the boat. Best and safest procedure is to stop the boat a short distance away and throw out a light rescue line. Hauling the victim on board can be a very physical task and must be done with the thought in mind the person overboard may be injured. Make sure the propeller is stopped before bringing the victim into the boat. In fact, the propeller should be stopped whenever there is a person in the water near the stern of the boat.

Other drills to practice include leak and damage control drills, fire drills, anchoring and unanchoring drills, and even "abandon craft" drills. Always hold a critique after a drill. Discuss what was done right and what was done wrong. Be sure each crew member has his or her turn at running the boat for the drills. Remember,

someday the man overboard may be the skipper.

Still looking for something to do in the fall? It's also a good time to take a close look at the craft and get some maintenance performed. A boat can represent a considerable investment. To keep up the value, she must be properly maintained. The more maintenance you're able to do in the fall, the sooner you'll be able to hit the water next spring. Keep in mind, also, deferred maintenance is always more burdensome and expensive. A good maintenance program should include any equipment and the engine as well as the boat itself. Keep records or make a checklist of all fall maintenance performed. It'll keep you from repeating steps or, more importantly, missing something next spring. Be it outboard, inboard, sterndrive, rowboat; constructed of wood, fiberglass, or aluminum, much better maintenance is often performed in the fall when you aren't under the pressure to get out and get that first day on the water under your belt. Much service work and maintenance can be easily handled by any reasonably competent person.

If you trailer a boat, fall is also a good time to check the trailer out and do some maintenance. Be sure to do it before the really cold weather moves in. The trailer is often the most neglected piece of boating equipment.

Remember, water in the wheel bearings can freeze, damaging them. It's a good idea to thoroughly clean and repack the bearings before the snow falls. The tires, frame, and electrical system should be carefully checked, also. Fall maintenance on the trailer, like the boat, will get you on the road sooner next spring and probably more safely, too.

The pleasures of boating are not really related to any one season or the size of one's craft. Some people can afford to start out with any size boat they desire and pay to have everything done for them. Not most of us. Many of us will never, even in our dreams, own a boat over 18' in length, either out of choice or economics. But, be that as it may, boating is fun for everyone — if done properly and safely. If you can extend the boating season by a few weeks or a month or two, so much the better. It's a great way, also, to get more return on your investment (and soothe a conscience for buying a new boat instead of another car). I'm often asked what a boat costs. I usually reply, "It all depends on *how* and *how often* you use it."

You can get more use out of your boat. There are still some days, weeks . . . maybe a month or two ahead with a scattering of acceptable small boat weather and water conditions. Why not put them to good use?

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

FISH FACT: Walleyes, crappies, rock bass, perch and sunfish travel in schools that may number from a dozen to literally scores. These schools are maintained whether the fish are feeding or resting under protective cover.

Trout can drive you up the wall by refusing to take dry flies offered them while they are feeding persistently on the surface. But don't quit trying for them when you decide the dry fly you are using is a good imitation of the naturals. Take off the floater and fish with a wet fly or nymph of the same pattern. Riding just under the surface, they will represent nymphs moving toward the surface to "hatch."



To escape the bright sun and blazing heat of summer, fish hug shorelines, and the angler casts from the shallower, unshaded water into the shadows. Shade along the shore is provided by trees and tall weeds and bushes even in the middle of the day. The water is cooler here and shaded areas are more comfortable for the fish. Minnows also congregate in such areas and provide food for the fish.

Three fine colors for surface plugs are a shiner finish, white body with red head, and a frog finish.

One way to get a worm down into the water without use of a sinker is to release some slack line as quickly as the bait hits the surface. The weight of the worm, free of any drag from the line, will carry it down slowly and naturally.

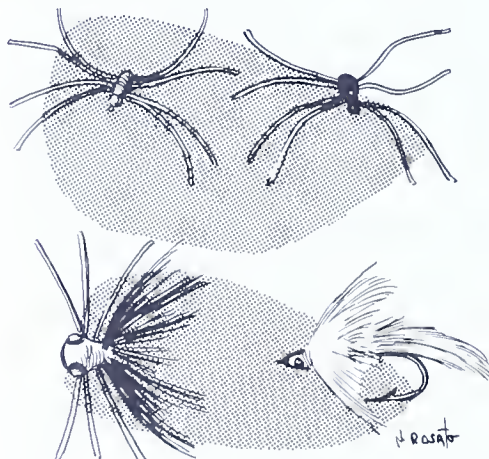
Shiny new spoons and spinners are not always the best. Those whose surface has become dull with use are often more effective. In fact, some anglers rub new spoons and spinners with a very mild abrasive to take off some of the shine.

What do you really see when you look at a swirl of water on an otherwise flat and placid pool? The swirl tells you that a rock or some other obstruction is in the water, with its top close to the surface. Hungry fish congregate around such an area, waiting for food to float past the obstruction.

Plastic worms are effective in and around lily pads; but, they must be of the floating variety, with no sinker or other weight attached. "Crawl" the worm slowly over and around lily pads and along the edges of pads into little pockets of open water. The slower the retrieve, the greater the possibility of strikes. A worm cast hard and retrieved with great vigor through lily pads will frighten fish more often than attracting them.

A cigar-shaped floating surface plug can be converted into a subsurface lure. Attach split shot to the line 18 or 20 inches above the lure. Obviously, the more split shot used, the deeper the lure will travel in the water.

Live minnows used for bait usually are hooked through the lips. There is a right way and a wrong way to do this. Run the hook up through the bottom lip and out the top lip. Then the minnow will swim in a natural position.



Thin rubber legs make fly rod surface lures more attractive to bluegills and bass. The legs twist and wriggle with the slightest action of the rod, or even of the water. The thinner the rubber legs the more action they will produce. Legs are effective on lures with bodies of cork, rubber or plastic and of all sizes, as illustrated. Soft hackle at the head and webby saddle hackle wings also produce a maximum of action with a minimum of rod work.

Pockets in fast-moving, rock-studded water are prime trout holding and feeding stations. Short and accurate casts are required, and wet flies and nymphs are the best lures. A sinking line helps to get the fly down into the water quickly. This is necessary because the pockets usually are relatively small.



Black surface lures are good, even for night fishing. The fish can see the outline of a black lure against the very dim light of a night sky. This rule applies to dry flies, bass bugs, and floating plugs.

Retrieve to the limit every cast of a floating bass lure. The fish will often follow the lure for some distance before striking it. The disturbance that results when a lure is picked up off the water prematurely can frighten the bass away. This same rule, of course, applies to fishing with dry flies for trout.

A frog that stumbles off the shore or a lily pad does not try to swim farther out. It turns immediately back to the shore or pad. So, a bass bug that imitates a frog is effectively fished from shore by casting out and bringing it back to shore, or if the angler is in a boat, by casting into open water and working the lure toward the lilies.

Tiny black ants, tied on hooks as small as size 22, take trout. The same lure can be used in fishing for bluegills, but it should be tied on a No. 10 or No. 12 hook.

Don't fool around with a hooked pickerel or pike. Keep it coming right to the net, putting as much pressure on the fish as the line strength will permit. That will make it harder for the fish to hang up in weeds or other debris in the water.

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The inviting waters of Lake Erie's Presque Isle Bay

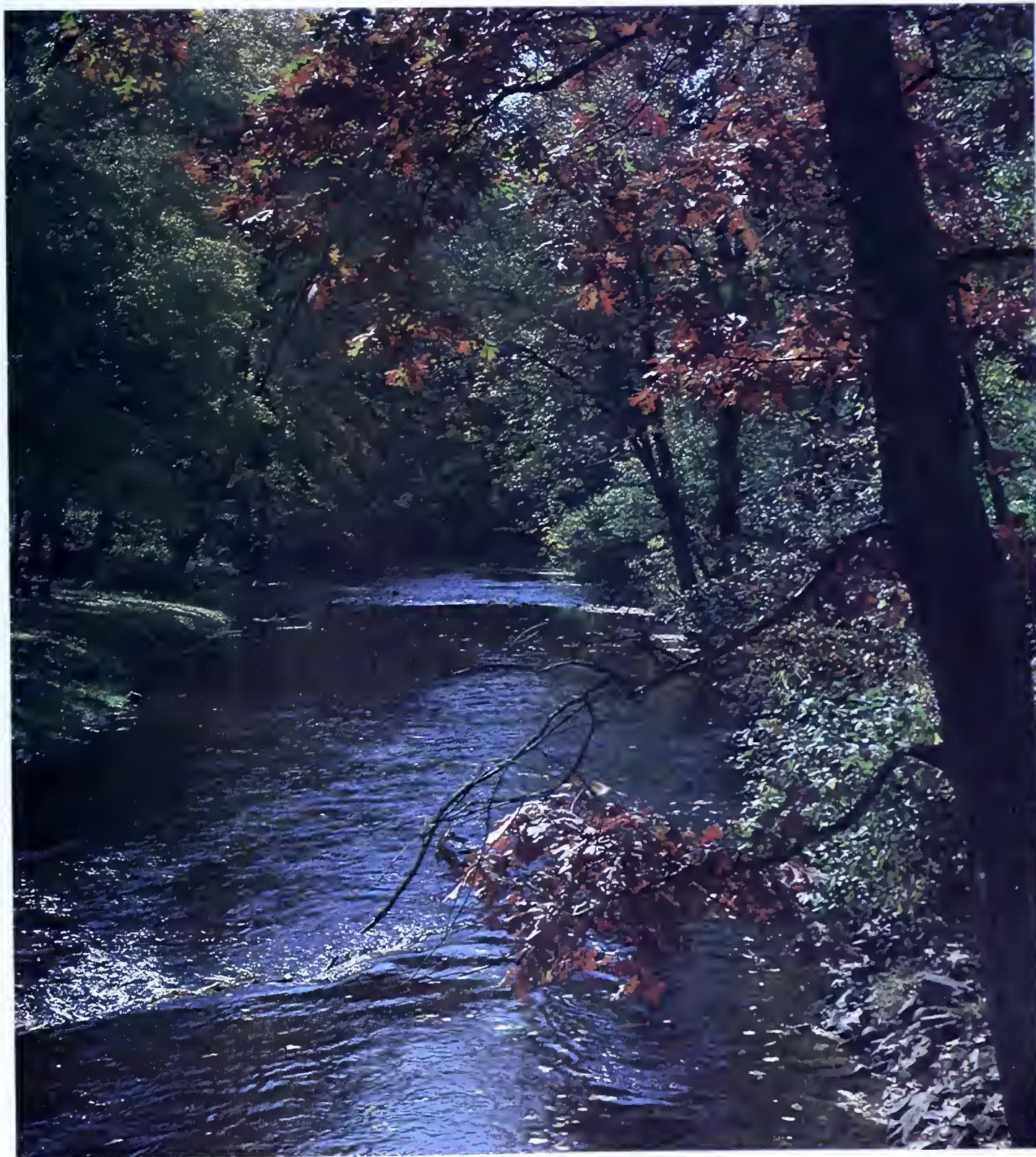
PENNSYLVANIA

OCTOBER—1978

Angler

the
Keystone State's
Official
FISHING·BOATING
Magazine...

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Single Copy





Autumn's Challenge —

This is the time of year when those of us fortunate enough to live in a land of four seasons should really be grateful just to be alive. This is the end of the vegetable gardens. If we have to think about weeds and hoeing for more than six months, the bugs that climb into your ears and eyes while you enjoy the rewards of the summer growing season, we are always, I think, grateful that the tomato/zucchini season is over (even those of us who do not grow them are offered surplus fruits of another successful Pennsylvanian and take them — one way or another they'll get them into you!).

By October there's no question that the autumn solstice is upon us. Leaves have changed colors . . . from the brilliant scarlets of the red maples, the yellows of sugar maples and aspens, to the ashes — purplish green to rusty brown.

You are able to see the hills in their own contours, fields and forests take on a rugged, unkempt look. Man — successful man — has taken on a "neatness conscience" but nature does not have time to be neat and tidy. Fields that have not been mowed recently are splashed with brilliant colors while spewing forth millions of seeds for the future.

While late dawns and early dusks make us think that there's not as much time available to humans for enjoyment as in the long days of the hot, hazy and humid summer, we soon realize that these days, though shorter, are filled with broader horizons, cleaner smells, the ability to adjust to temperatures with corduroys, flannels and wools. And, that sport to which we in the Fish Commission are dedicated is truly making its best offerings of the year.

Smallmouth bass, walleyes, northern pike, muskellunge — even the great salmonid family that so many tie only to madhouse April opening days. There are millions of trout out there in our Commonwealth's streams, monuments to your inability to catch them . . . outright contradictions to the feelings of many who believe that fishing enjoyment is following a white truck in April and May. Our inventory surveys with qualified and dedicated biologists and technicians have proven to thousands of Pennsylvania sportsmen that they have not begun to touch the populations of trout in Pennsylvania streams by the beginning of June and extending throughout the summer. They are out there — *right now* — in clear and cooling water. They're smart and wary, and offer a wonderful challenge to those who have now begun to feel a stir of cool weather oriented blood.

While autumn portends sleep of the earth and the rest of its resources . . . waiting for a new birth next spring . . . I challenge you to get out and find out what there is available right now in angling enjoyment in Pennsylvania.

Ralph W. Abele,
Executive Director

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

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ON THE COVERS

The Keystone State is blessed with unsurpassed flaming foliage each October and outdoorsmen, above all people, have great opportunity to "take it in," especially while fishing. Our covers this month feature a typical trout stream, on the front; the mighty Susquehanna River photographed from high atop a Perry County hill, near Liverpool, on the back. Photographs by the editor.

MONTHLY COLUMNS

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James F. Yoder, Editor

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SURPRISE!

We received our April *Pennsylvania Angler* and when I got to the back I saw my picture on the back page. I'm the one next to the tree (I'm left-handed). We have a trailer at Hammersley Fork. I've been fishing a good many years and that was the first time I ever had my picture taken when fishing. Thanks again. Maybe I'll see you there this year. I just love fishing.

ISABEL MINARCHICK
Philipsburg

"OUT OF THE MOUTHS OF BABES"

Being cautious parents we had frequently warned our children not to talk to strangers. On the other hand, their grandfather often had related stories to them about receiving help in one form or another from sportsmen whom he did not know.

Several years ago, when they were 5, 7, and 8 years old, they went fishing at a pond within viewing distance from our home. In a short period of time, they came home carrying two stringers full of bluegills that a man had given them. After my lecture was repeated again about "not talking to strangers," my one child replied, "But, Mom, he wasn't a 'stranger,' he was a *fisherman*." Now that they are all teenagers and avid sportsmen, I know they, too, are never "strangers" to anyone.

JANICE L. PARCELL
Orangeville

OVERBOARD!

As a subscriber to the *Angler* magazine for many years, I wonder if a plea to some unsuspecting fisherman making a surprise catch would be of some help? Prior to bass season June 10th, the following accident occurred.

Planning a canoe float trip on the Allegheny River, a fellow fisherman and his canoe partner had the misfortune of trying to avoid an overhanging tree in Sandy Creek where we entered the water to begin our trip. The water was a little high and fast from previous rain and turned

their canoe sideways and upset. They lost a full tackle box and two rods with reels intact. These items were not lashed down because we had intended to do some trout fishing if possible in Sandy Creek. If it isn't against the magazine policy could you please print the following in the "Leaky Boots" section of the *Angler*.

LOST — REWARD — Tackle Box and two fishing rods complete with reels. Approx. one mile from the Allegheny River on Sandy Creek, Venango County. If found please contact address below:

DAVE FLYNN
Kittanning Pike, O'Hara Twp.
Pittsburgh, Pa. 15215

HOW IT'S DONE...

A little more information on the glass, pint-sized whiskey bottle (0.473 liter, thanks to *Pennsylvania Angler*... now I know what size bottle I use for carrying my minnows in).

Yes, the glass bottle is breakable and has to be handled with care. I've been looking for a clear, plastic bottle of this size that can be seen through; so far, no results. I've carried minnows this way for 40 some years and so far I've broken only one. This happened when I jumped on a small cement bridge with the lid, or cover, of my fish basket open. I've remembered this error ever since cause it meant I had to stop fishing, walk down stream about a mile where my buddy had the car parked so I could get a new bottle and a new supply of minnows, and then walk back upstream — the same mile I just walked down — so I could start fishing again. Most times only two of us fish together.

Take a typical day on Beaver Creek. This is the first creek that empties into Yellow Creek below Loysburg, Bedford County. We each carry a set of car keys so one guy drops off at Ditwilers' Dairy (that's about as far up on the headwaters of Beaver Creek as we care to go), and starts fishing down. The second guy drives the car down and parks it at the humpback bridge at Salemsville, then he starts fishing downstream. About an hour and a half or two hours later the first guy will reach the humpback bridge. He changes the water in the breather type minnow bucket, because the heat will cause the minnows to die. When it gets hot we take short, pint plastic bottles, fill them full of water and put them in the freezer so that when we go we have 4 to 6 pints of ice to keep the water temperature in the minnow bucket cool. Seems like a heck of a lot of work but if you want to travel all day on a small creek and fish it with minnows, the way we do, then the bait has to be taken care of. After the water is changed, he puts his fishing basket in the back of the car and opens the car window on the

driver's side, sticks his 9 ft. rod through the window opening, places his reel on the ledge by the back window, then gets in the car and shuts the door. Do this carefully or you're liable to break your rod when you shut the door. Bend the tip of the rod so that it fits behind the radio antenna sticking up from the front fender. After you're set you drive the car down creek about the same distance and park it where it can be seen from the creek, you start fishing down creek again and your buddy picks up the car when he sees it and moves it down creek, parks it, and starts fishing again. Sometimes after dinner we meet at Loysburg, there is a section of creek through the fields about a half mile that can be seen from the road. We don't have to walk back to the car so we make up our mind to go home or else "spot fish" on Potter Creek or Three Spring, both about 15 minutes' drive from where we leave Beaver Creek. I hope someone enjoys reading this article as much as I enjoy reading many articles and stories in the *Pennsylvania Angler*.

RAY REININGER
Johnstown



BOWFIN CATCH —

Enclosed is a picture of my son, Joey Ranieli, 7 years old, with the 19-inch, 3-pound bowfin he caught on a worm at Indian Mountain Lakes.

If it were not for the *Pennsylvania Angler* we would not have known what kind of fish he had caught.

None of our fisherman friends knew what it was but my nephew, Eddie Herbert, remembered reading in the June issue of the rare catch of bowfins in the same area. We are now telling our friends what kind of information can be found in your fine magazine.

MR. & MRS. JOSEPH RANIELI
Pittston

Spring Creek Epitaph

by Jean Smith

Bellefonte

Late Friday night I answered a knock at my door and found a bewildered man. "Where," he asked, "are all the fishermen? The place is deserted! There are no people, no cars, no campers, no campfires . . . everyone is gone!" He had driven from Pittsburgh to spend "first day" of fishing season along the banks of his favorite stream, Spring Creek. His sad, bitter reply to my explanation was, "So they got this one too! This was the best stream in the state!"

All day Saturday his words haunted me as I remembered "first day" of fishing season in years past. I've lived along Spring Creek for 20 years and have never cast a line into her waters but "first day" was somewhat akin to carnival time and even a casual bystander was caught up in the excitement of the day.

I remembered the predawn enthusiasm of my now 82-year-old father-in-law who, with his brothers, had fished Spring Creek as long as they could remember. He would recall the days when they had their legal limit by breakfast time, then wonder if perhaps this year he could repeat the feat. My 40-plus-year-old husband's eyes still light up when he relives the nights he and his teenage buddies camped along her banks to insure their being the first to that famous fishing hole. I remember the times when my own daughters could hardly sleep—lest they not hear the alarm that sent them sneaking out of the house at 4:00 a.m. to join the colorful army of fishermen lining her banks shoulder-to-shoulder.

Driving down the road to town on opening day was more challenging than navigating any skillfully designed obstacle course as one slowly crawled between cars and campers that were parked on both sides of the road and carefully dodged fishermen, small one-day-to-be fishermen, dogs and families. Yet just driving through the crowd one could capture the joy of being outdoors and the urgency to "get to that hole before the other fella gets all the fish."

But this "first day" was different. No, it wasn't the cool, windy weather. I've seen fishermen line her banks on days so cold icicles formed on lines drawn from the water. No, this quiet and stillness was different, all that lined her banks were bold posters blaring "FISHERMEN BEWARE."

By afternoon I realized this was like waiting at the hospital for news of a terminally ill loved one. Spring Creek had suffered a heavy blow ten years earlier but the words of the fishermen were, "She is coming back." Could her fragile ecology stand the effect of this newly detected poison in her bed?

Suddenly I wanted to cry—cry for all the young fathers who would never share with their child the joy of that first fish netted from her waters, for all the hurried people who suddenly had no reason to find a quiet hour or two on a warm summer's eve in her cool refreshing waters, and for all those like me who were a part of the spirit of Spring Creek just because we lived along her banks.

(Editor's note: Spring Creek, to which the writer refers, has suffered past degradations detrimental to fish life. The sad commentary above refers to the pollution of the stream by discharges of Mirex from the Nease Chemical Company. The "Fishermen Beware" posters are meant to alert anglers to the public health implications because of the accumulations of this hazardous substance in fish flesh.)

"GREAT BUY..."

This is my first time writing to the *Pennsylvania Angler*, which I read as soon as I get it, especially the "Leaky Boots" and "Notes from the Streams."

What I'm writing about is our license fee which, at the present time, is only \$7.50. If persons who oppose higher fees would go south to West Virginia, they would find fees of \$6.00 resident, plus \$5.00 for a trout stamp. Also, the streams are stocked with a lot fewer fish (or so I understand) but here the Pennsylvania

Fish Commission does an excellent job of rearing and stocking all kinds of fish for all kinds of purposes. I think \$7.50 is a great buy at today's prices. Also, these same people that oppose higher fees will go to Canada and spend \$6.00 for a three-day, or \$10.75 for a season license, and think nothing of it, not to say anything about what they might spend for a place to stay, boat, motor and guide, etc., when they have just as good fishing here in Pennsylvania if they would put their minds and the time into it.

When I was a boy back home in

Morgantown, West Virginia, I had little much more to catch than a few bluegills and bass in some farm ponds, a few chubs in the creek near where I lived. The Monongahela was almost barren of fish at that time so I really appreciate what the Pennsylvania Fish Commission does here so keep up the good work. Thanks again.

JIM POE
Oakmont

More Leaky Boots . . .

(please turn to page 30.)

MEALS from the CREEEL

by Arthur J. Michaels

Testing Your Fish Cookery Know-How

October means Columbus Day, Veterans Day, Halloween, and autumn getting into high gear. October also means that you and your family have made the transition between summer and the back-to-school activities of new notebooks, pens, pencils, lockers and tests.

Luckily, this fish cookery test won't determine your college aptitude, reading level, or your class standing. But you will stand in a class by yourself as a knowledgeable fish chef, if you do well on this test.

Are you a gourmet guru? Or are you a kitchen catastrophe? To find out, sit back, take out a pen or pencil, and in the settled, back-to-school spirit of October, answer these eleven true/false items as best you can. Circle the correct answer for each item, and then check your responses with the explanations that follow. Keep your eyes on your own paper. Now, no talking and get busy.

1. A fresh fish has a shiny eye, with no clouding or fogging. T F

2. A fresh salt water fish at the fish market has a mild, ocean-like smell. T F

3. Fresh shrimp are pungent and soft to the touch. T F

4. Fresh scallops at the fish market are gray and milky. T F

5. Most fish have about three times fewer calories than an equivalent portion of other meats. T F

6. Fish should be cooked at high temperatures, between 350° and 500°. T F

7. Fish, cooking in your oven, is done when you can smell it. T F

8. Boiling fish robs it of vitamins and minerals more than any other cooking method. T F

9. Frozen fish should be thawed before cooking. T F

10. Canned white or chunk light tuna contain far fewer vitamins and minerals than fresh hamburger. T F

11. You can store cleaned fresh fish in your refrigerator but they must be kept well-covered. T F

ANSWERS

1. When you buy fish at the market, always look at the eyes. Steer clear of a fish with clouded, gray, or fogged eyes. This test for freshness is the most discreet — you don't have to handle the fish to judge its freshness (true).

2. And don't be afraid to stick your nose right down close to the chopped ice for a whiff of a fish you might buy. Close your eyes as you sniff away. If you hear the pounding surf and taste the salty air in your imagination, buy the fish. It's fresh. But if your smell test conjures other, unpleasant visions, move on to the next fish (true).

3. Fresh shrimp at the fish market have very little odor and are firm to the touch (false).

4. Pass by those gray and milky

scallops. Fresh ones are shiny and firm to the touch like shrimp. Scallops that are slightly orange or yellowish around the edges are also fresh (false).

5. Most meat cuts average about thirty percent fat, and some meats (ham, for instance) are fifty percent fat. Fish often have as little as one percent fat.

These fat differences are important for two reasons. First, fish and other meats are equal in nutrition and this is the most important reason why dieters should eat more fish than meat — less fat than meat but equal in nutrition. Secondly, in buying an equal amount of nutrition, but less fat your supermarket shopping dollar goes farther at the fish counter than at the meat display (true).

6. These higher temperatures may be suitable for cooking other meats but they spell disaster for cooking fish. The connective tissues of muscle fiber in other meats are much thicker than that of fish. In fact, the thin connective tissues in most fish begin to break down with very little heat. When the meat proteins are cooked there is a longer period of time before the connective tissues in the meat break down, robbing it of taste and nutrition. The opposite is true in cooking fish. Since the connective tissue in most fish is so thin, very soon after the fish protein is cooked in the muscle fiber, the connective tissues begin to break down. So, you have to cook fish at a lower temperature if you expect the fish to hold its flavor and nutritional value.

High heat in any cooking method causes fish to lose vitamins, minerals and flavor quickly because high heat dries up the juices in your cooking fish. Believe it or not, your fish is cooked when the muscle fiber reaches a temperature of about 150° (false).

7. You've overcooked your quarry if your kitchen smells "fishy." To test the doneness of any fish, with any cooking method, poke the fish with a



fork at its thickest spot, separating the fish meat slightly. If it's white, flaky and juicy, it's done. If it's white, dry and rubbery-tough, it's very much overcooked (false).

8. In boiling, nutritive juices and flavor soak out of your fish quickly, because the wet heat of boiling permeates the fish faster than the dry heat of other cooking methods, like broiling or baking. Instead of boiling fish, it would be better, nutritive-wise, to steam the fish above the boiling liquid and consume both the fish and the liquid (true).

9. If you plop a frozen fillet in your oven, it will cook unevenly. After a few minutes, the outside will be overcooked and the inside will still be raw and slushy. This is especially so with large fish steaks like salmon, swordfish, striped bass and bluefish.

In addition, fish cooked right out of the freezer just don't taste as good as fish thawed before cooking. And shrimp and other shellfish *must* be thoroughly thawed before cooking. If

you cook them directly from the freezer, they'll taste very much like shriveled pink pencil erasers!

Let small, cleaned, whole fish and fillets thaw in your refrigerator for at least twelve hours. If you're going to cook thick fish steaks, or a large quantity of frozen fish, let them thaw at least twenty-four hours in your refrigerator (true).

10. Canned tuna is just as nutritionally wholesome, if not more so, than equal amounts of hamburger. You shouldn't frown on serving canned tuna often! Proportionately, calories and proteins are the same in beef and canned tuna; but, canned tuna contains much more vitamin A, iron, iodine and calcium than beef, and canned tuna also contains vitamin D — beef has none.

Nevertheless, let the tuna buyer beware. Chunk light or white tuna tastes much better than the less expensive dark grated stuff. Always buy white or chunk light canned tuna. If you buy the dark tuna, you may

quickly turn your tuna-loving family into a brood of tuna-haters (false).

11. Your stored fish will hold its nutrition and flavor for two or three days in the refrigerator, only if it's well-covered. If stored uncovered in your refrigerator, fish steaks or fillets will dry out quickly, within a matter of hours, and everything else in your refrigerator will smell "fishy." Wrap large fish in foil and waxed paper, and put smaller fillets in a bowl covered tightly with a plastic bag or plastic food wrap (true).

SCORING

If you had only five or fewer correct answers, leave the cooking to someone else and bone up on your practices and procedures. If you had six to eight correct responses, congratulations. You have quite credible command of your kitchen. If you have nine to eleven correct answers, you're a gourmet guru for sure . . . we'll all be over for dinner tomorrow night!

Bait Up

by Don Kingery

illustrated by

Ray Piccolin

GRASSHOPPERS & CRICKETS

Orthoptera is a large order of insects including the grasshoppers, crickets and katydids. These insects will be treated together due to the similarity in their habitats and techniques used in fishing them.

Everyone is familiar with grasshoppers. In the fall every field, meadow and weed patch is literally crawling with them. On cool evenings and mornings before the air warms up, grasshoppers will be torpid and can easily be hand-picked from the plant stems they are resting on. After the air warms up, grasshoppers can be captured with the aid of a butterfly net. Instead of pursuing individual specimens, you will often find it more productive to sweep the net back and forth as you walk through tall weeds. Some fishermen collect "hoppers" by taping flypaper to the front bumper of their cars and then driving through a field (with permission, of course!) or down a weed-lined country road.

Another unusual but highly effective technique is to spread a fuzzy blanket on the ground and then drive

the grasshoppers towards it. Those that land on the blanket will become entangled in the fuzz and can be picked off at your leisure. Still another trick (although I never had the courage to try it) is to put on an old pair of your wife's nylons and walk through high weeds. The grasshoppers that collide with you get tangled in the nylons and can be captured by hand. (*Ed. note: Mercy sakes!*)

Like grasshoppers, crickets also frequent fields and gardens, but, unlike grasshoppers, crickets are nocturnal, preferring to spend the day hiding under rocks, logs and boards. These are the most productive places to seek them. Turn over flat rocks and catch crickets by hand before they scurry away. Crickets may be purchased live, dried, or packed in oil, from many bait shops. Katydids and other Orthoptera, in addition to being found in meadows, will be found on shrubbery, tree branches and bushes where they can easily be netted.

All Orthopterans will keep for several days in a container with grass or leaves, provided it is kept cool. To keep them alive for longer periods, refrigerate them; or, put them in a terrarium. Grasshoppers prefer fresh grass or lettuce as food. These are also acceptable to crickets, but, in addition, they will eat slices of raw carrot, potato, apple and bread. If you want to start a colony and raise crickets year-round, slightly moist soil or sand must be provided for the females to lay eggs in. When overcrowded, crickets will become

cannibalistic. To prevent this, give them a little bone meal.

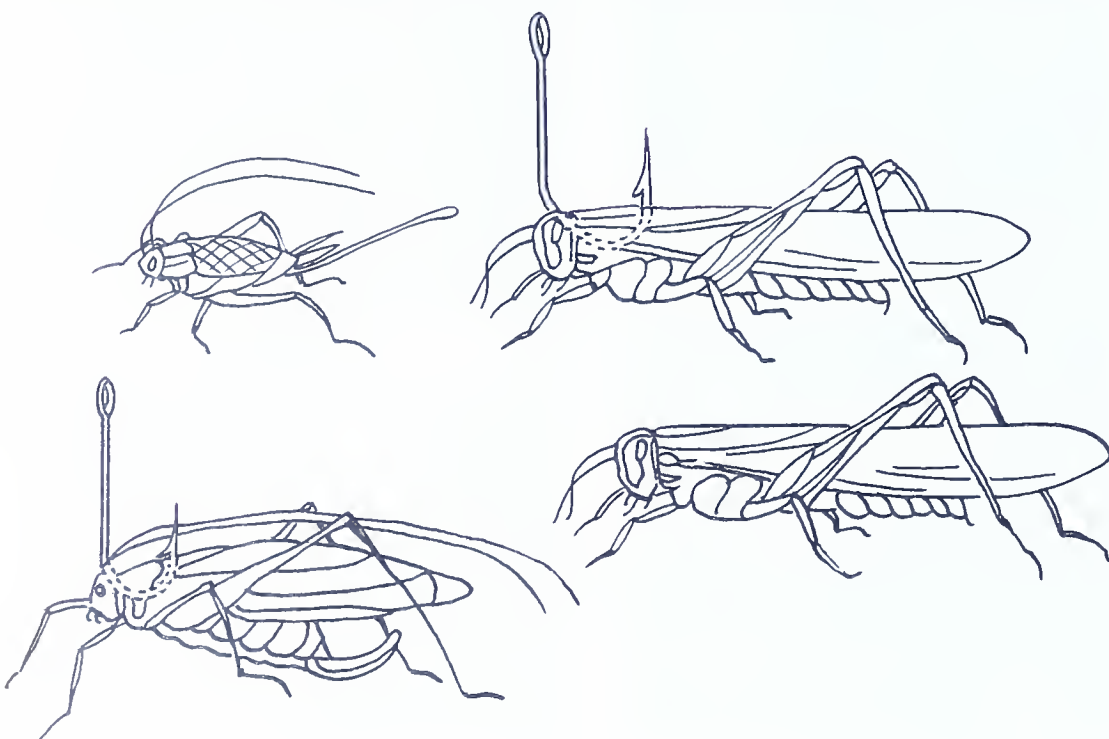
When fished on the surface, grasshoppers and crickets live longest if hooked under the collar or tied to the hook. Take a longshank hook that fits the hopper, tie two pieces of thread or rubber bands on the hook, and then tie the hopper to the hook. Hook dead hoppers through the collar or through the body and fish them near or on the bottom. To fish under brush or other areas difficult to cast to, pass the point of the hook through the edge of a leaf and let the leaf drift into the area. A sharp tug frees the hook, making it look like the hopper jumped off. Don't be afraid of using the largest grasshoppers you can find; lunkers like a mouthful!

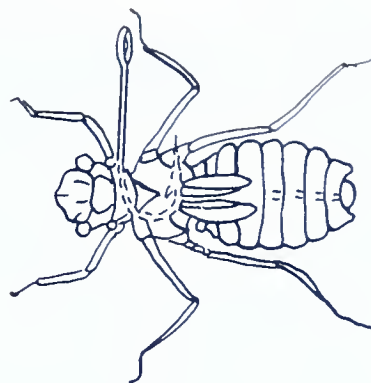
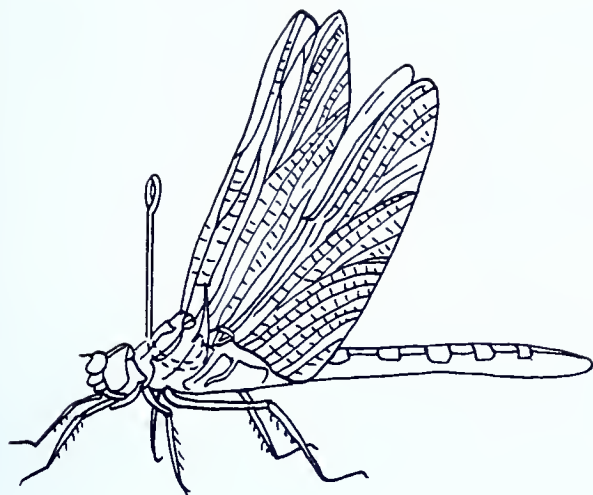
For winter use, grasshoppers and other Orthopterans can be preserved by drying, freezing, or packing in alcohol. Dried insects are very brittle and tend to break apart at the slightest touch. To prevent this, place the insects in a jar with some damp rags or damp sand the night before you go fishing. Cap the jar and put it in a warm place and by morning the insects will be soft and "fresh."

DRAGONFLIES and DAMSELFLIES

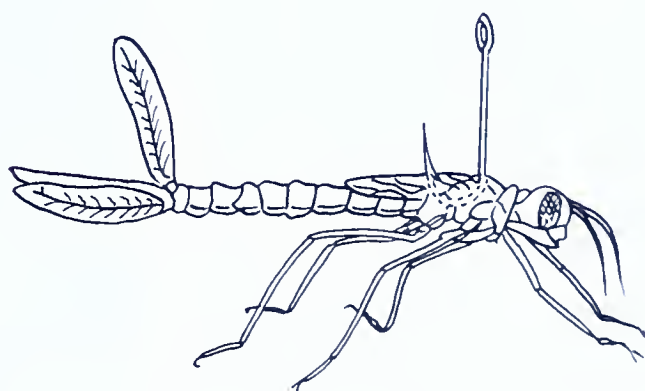
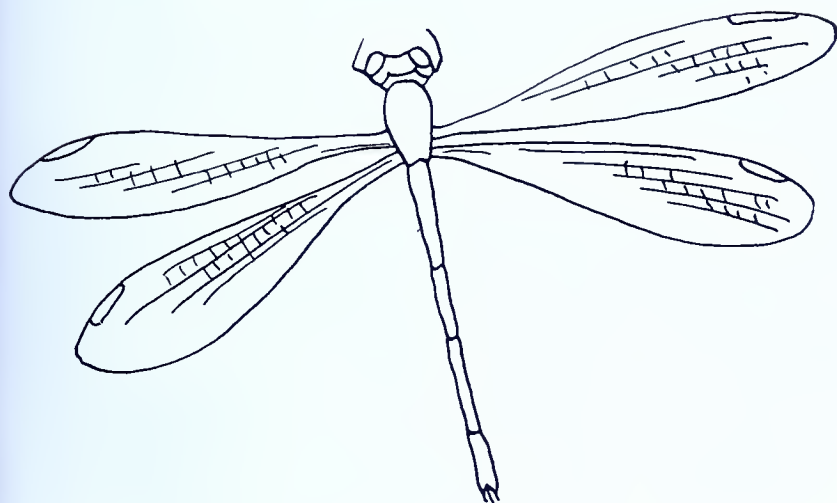
With the exception of Blackflies and Mosquitoes, the Odonates, (Dragonflies and Damselflies) are probably the aquatic insects best known to fishermen. The adults are seen from daylight to dusk flying over streams, lakes and ponds, greedily devouring mosquitoes, gnats and other small flying insects. Although carnivores, they cannot bite men, have no stingers, and neither administer to the medicinal needs of reptiles, nor spend their time sewing up the ears of bad boys. Such names as Devil's Darning Needle, Snake Doctors, and Horse Stingers, are totally unjustified for such an attractive and beneficial insect. The larval stages of all species are aquatic, some growing to over three inches in length and taking four years to mature.

Dragonfly nymphs are found in all types of fresh water: from small ponds to large lakes, to roadside ditches, and in both swift and slow streams. The nymphs or naiads, as they are also known, are collected with a long-handled net made of wire or strong nylon. The long handle (four





Top left: adult dragonfly; nymphs, above, are sometimes called "perch bugs" or "mud bugs." Bottom left: adult damselfly; below: a damselfly nymph.



to six feet) is recommended because the larger species tend to favor deep quiet pools and ponds. A wire net is best because there is less chance of its ripping on a snag. Scoop along the bottom, picking up algae, vegetation, mud and debris, and dump the whole mess in a shallow pan or on the shore. Be sure to scoop up an inch or two of mud as some species are burrowers. If you don't have a net, use a garden rake to bring vegetation and debris up from the bottom. Sort through the debris and you will soon discover the stout-bodied nymphs squirming and crawling awkwardly around. In swift streams, most of the nymphs will be "climbers;" collect them by holding a seine downstream and shaking underwater branches and trash to dislodge the larvae. Dragonfly larvae can be collected year-round and are excellent ice fishing bait.

These nymphs can be kept in an aquarium or minnow bucket, but as they are inclined toward cannibalism, they are best kept in jars of water in the refrigerator. If kept cold (but not frozen) they will live for two months or more. The best way to raise them is

in wire cages in a stream or pool. Make the cages out of quarter-inch hardware cloth and leave them half out of the water so the adult can emerge. If you choose to raise them in an aquarium, you will have to have a constant supply of smaller aquatic organisms for them to eat. They are predators and will only eat live food. They can also be kept for up to a week in a bait box filled with wet moss, *but it must be kept cool.*

Dragonfly nymphs have an irresistible appeal to trout, bass and all panfish. Hook them through the collar or abdomen and fish them on the bottom. Let them sit for a minute and then retrieve them with slow, short twitches, mimicking the natural movement of the insect. If that fails, put on a small bobber or use a fly rod with floating line and fish them just off the bottom. In streams, let them drift along the bottom until you feel the bump that signals a fish.

Damselfly nymphs, also called "wrigglers," will be found in the same waters as Dragonfly nymphs but are easily distinguished by being smaller and slimmer. In addition, all

Damselfly nymphs will have three blade-shaped gills at the tip of the abdomen. Fishing with Damselfly nymphs is pretty much restricted to fly-rodging or cane-poling. They require the lightest possible tackle and very fine wire hooks. Drift them through pools with floating line, or a small bobber, and set the hook the instant you feel a fish. Fish tend to hold small larvae in their mouths and chew them, and will soon feel the hook. Damselfly nymphs should be kept in jars of water under refrigeration.

Adult Damselflies are easily captured with a butterfly net but Dragonflies are another matter. They are fast, strong fliers and incredibly skillful at dodging. However they are easily gathered by going to a pond-side meadow early in the morning while it's still cool and hand-picking them from the grass stalks and cattails they rest on during the night. Live Dragonflies should be hooked through the thorax, between the wings; or, put on a two-hook harness

(continued on page 32.)

Nature's Miracle

by Marty Marcinko
Fisheries Management Section

Fisheries programs in Pennsylvania include the annual production and allocation of over 4.5 million trout. This is conducted with the guidance of professional fish culturists and Area Fisheries Managers. Law Enforcement personnel annually supervise stocking of these fish with valuable assistance from sportsmen. These trout are primarily brook, brown, and rainbow — products from hatcheries across the state. Such an undertaking requires careful maintenance of brood stocks: skilled selection, a good diet, and continuous upgrading of these brood fish are necessary to achieve fast-growing hearty offspring capable of enduring a completely new environment.

Presently, the Fisheries Management Section is in the third year of an inventory program in which physical, chemical, biological and social data are being gathered for every stocked trout stream in Pennsylvania. The ultimate goal is to provide sound scientific management on a watershed basis, thereby eliminating the present quota system. Although the first stage of this inventory will not be completed until 1980, one important fact has become apparent: despite plantings of several million trout, many of the trout in our streams are the product of natural reproduction.

Direct evidence of natural reproduction is found through electro-fishing. These operations frequently reveal sublegal size trout. A knowledge of these early life stages of trout is important to the fisheries biologist, therefore the subject has been carefully studied. From these studies we know a great deal about hereditary factors, changes in metabolism, distinct relationships among coexisting species, and the effects of environmental factors on form and structure. Further, nature's methods have been modified and applied to artificial techniques of brood stock handling in the hatchery. Spawning by wild fish and artificial spawning



"Because the eye is clearly visible, embryos at this stage are termed 'eyed'."

realize the same goal: production of a fertilized egg. Research and observation have enabled us to follow nature's miracle.

As temperatures drop and days shorten, nature prepares for winter as signaled by autumn's display. Within the stream wild brook and brown trout are beginning a spawning ritual that has occurred every fall for centuries. The shortening of daylight hours is critically important in triggering spawning for these two species. The exact time and setting varies, but essentially begins with migration to riffle crests or eddies where water may barely cover their backs. Both brook and brown trout require clean gravel with a good *vertical* flow of water. Gravel within the streambed which is clogged with fine soil, silt, or vegetation will be avoided. Brook trout will utilize coarse sand or fine gravel if available, otherwise the requirements for substrate selection are quite similar among the trout species. At her chosen site the female creates

a small depression called a redd. A brief courting procedure ends with egg and sperm uniting to provide the seed for perpetuation of the species. Stones and gravel loosened by upstream digging cover the eggs, thus affording some protection against flooding and predators. It is thought that this slight mound of stones may even aid in circulating freshly oxygenated water to the developing eggs.

Eggs (called ova or roe) develop in the ovaries of the female trout. They begin as microscopic cells which undergo structural, functional and physiological changes during ripening. One of the most important changes is the synthesis and storage of yolk and oil droplets — the source of nutrition for the future embryo. Carbohydrates, fats, proteins and water will comprise over 95% of the total egg content. Further development results in the formation of an egg capsule which provides protection and facilitates respiration for the future

delicate embryo. Once these events occur, the next step is fertilization. As this time approaches both the female and her eggs are termed "ripe." Fish culturists use the term "green" for those eggs which are not ready for fertilization, or for females not ready to release eggs.

Fertilization is external, that is, it occurs outside the female's body. The newly ejected egg is semibuoyant, dropping slowly in the water. As the egg is released, the male releases a cloud of sperm or milt, thus initiating the process of fertilization. The actual union of sperm and egg is governed by chance encounter. When a sperm comes in contact with a ripe, unfertilized egg the sperm enters a small opening in the egg termed the micropyle. In quick succession the following events occur: 1.) changes within the egg bar the entry of additional sperm, 2.) the sperm and egg cells unite to create a zygote, 3.) stream water seeps into the space between the outer egg covering and the membrane surrounding the yolk where the zygote is attached. After this space is filled, the egg cover changes from a soft permeable membrane to a tough covering. This process is called water-hardening. Minerals within the water, such as calcium, are necessary for it.

The female will begin upstream digging immediately upon release of her eggs. This digging serves to cover the open redd and its living cargo with gravel. The entire spawning process may last several days or until the female has expended all her eggs. During the first 48 hours after fertilization, nature allows the egg to be jostled about by current as it settles into its permanent location within the gravel; subsequently, the egg enters a period of sensitive development during which movement will harm or kill the developing embryo. Externally, the egg color varies from a pale yellow to a deep orange depending on the amount of carotenoid pigments present. Internally, many changes are occurring which are unnoticeable without the aid of a microscope. Cellular division is creating millions of cells which organize into tissues, organs, and the systems, which collectively form the organism itself. Exceptionally high water during the months of December through February, anchor ice, or even low flow may disrupt or smother the eggs. Dead or unfertilized eggs may become infected with *Saprolegnia*, a fungus which can lead to infection and destruction of living eggs. In the hatchery, dead eggs can be detected by a whitening of the germ cell ring, hence the term

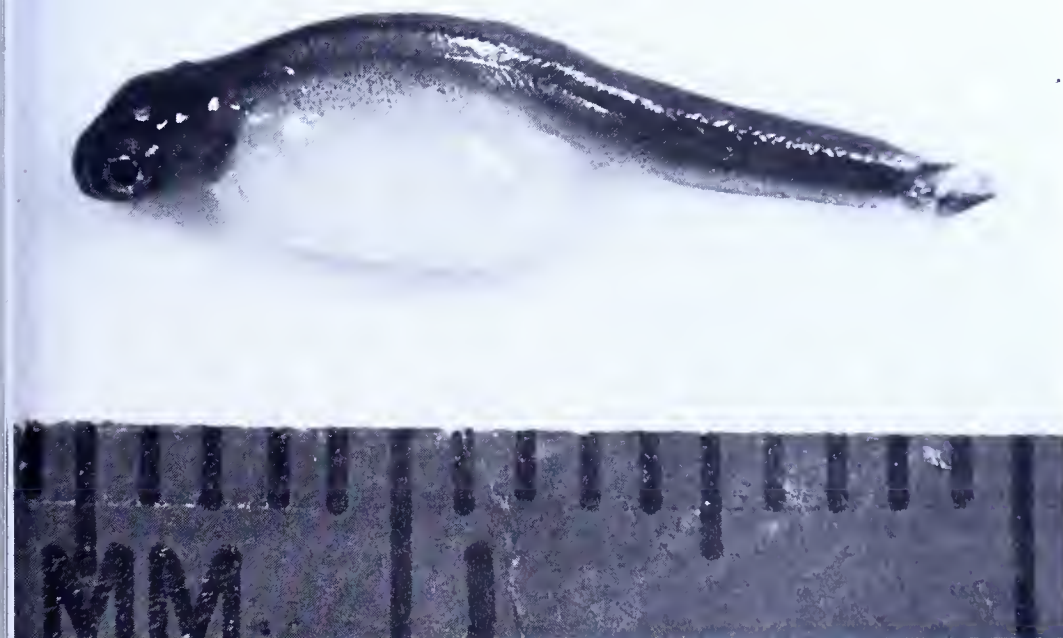
"ringer." This characteristic is useful for identifying and sorting dead eggs from those still viable.

The body of the embryo gradually takes on a fish-like appearance; however, it remains attached to the life-giving yolk mass. During the last three-quarters of the incubation period the brain becomes defined and the eye pigments become visible. Because the eye is clearly visible, embryos at this stage are termed "eyed." Upon reaching this eyed stage, eggs can be moved without causing any damage to the embryo. Prior to hatching definite movement is detectable as the embryo rotates within the egg shell. The embryo is now larger than the greatest circumference of the yolk sac. When hatching time arrives the embryo secretes enzymes that slowly dissolve the tough outer shell. Shell dissolution is accompanied by other metabolic changes in preparation for emergence of the organism now known as a sac fry.

The newly hatched sac fry derives its name from the heavy yolk sac located in the abdominal region. Eyes and brain are still developing while mouth and gut are as yet incomplete. The heart remains little more than a minute pulsating tube. Sporadic wriggling is the only evidence of controlled movement during this period of development. The sac fry is hardly an independent animal; the magnificence and beauty of the mature fish is not yet evident. In a short time, however, the yolk is absorbed, black melanophore pigments coalesce to form parr marks, internal organs complete development, and the young fish struggles to free itself from the gravel which has protected its development throughout the winter.

Reaching the stream, the small trout becomes an integral part of its environment, ready to prey or be preyed upon as it competes for survival. How many will survive is not known. By fall, roughly one year after fertilization, those which do survive will have attained fingerling size. Possibly in two to three years hence these new additions will migrate to a shallow pool and the miracle will begin anew. Many obstacles lie along the path to survival, but that's nature's way for wild trout — the beautiful creatures of Pennsylvania's cool, sparkling mountain waters.

Below: newly hatched sac fry "... eyes and brain are still developing ..."





Aside from being red, the berries of the waxwork, above, and those of the bittersweet, right, are extremely different. The leaves and the stems of these two plants are most unlike.



WAXWORK/BITTERSWEET MIX-UP

by Carsten Ahrens

There are so many factors that give enjoyment to a fishing trip other than the number of lunkers you may bring home. This is especially true in autumn where streamside trees, shrubs and their attendant vines seem almost delirious with leaf color. Even after the leaves have fallen many of these plants hold on to their fruits in the form of seed cases, boxes, vessels, pods, capsules, acorns, berries, haws, hips, etc., and the landscape continues to be varied and interesting.

One of the most attractive of these plants is a vine that entwines itself around anything it meets, even itself: the false bittersweet. It's a woody climber that can be found from Quebec to Manitoba and from North Carolina to New Mexico. It clambers to the tops of trees, twining counterclockwise about the limbs and its own runners, and, when it reaches the treetop, spills downward.

The inconspicuous greenish flowers of spring become yellow-orange ball in fall and after a frost its leaves yellow and drop; the balls split open in three ways, displaying crimson fruit. The dried gold and crimson arrangement makes a most colorful display by itself or mixed in with other plant materials in winter bouquets.

... *extra cash* ...

As a boy, I made pocket money by gathering branches bearing the gleaming berries and selling them each year to regular customers who looked forward to brightening their mantels for the holidays. Later, when I left for college, a neighbor grew the vine as a commercial venture and took over my old customers. Once plants that bear fruit are established the berries can be harvested each fall with judicious selection; actually, the quality of both plant and harvest can be improved by proper trimming.

Each fall through the years I have returned to our old farm for berries to

add cheer to my mantel. The vines are still growing in the same places where I harvested several scores of years ago. I am careful each autumn to uproot any wildgrape, woodbine, poison ivy, or other vine that might crowd it out. I go early enough so that I don't have to compete with the creatures that enjoy the berries as food. The birdman, Peterson, wrote that the fruit is eaten by many songbirds, as well as by ruffed grouse, pheasants, bob whites, and the fox squirrel. Plant a couple vines for the birds.

... *it takes two* ...

This vine, however is like the ginkgo, osage-orange, or the tree of heaven in that each plant produces only male or female flowers. That means both plants must be present so that cross-pollination is possible or there will be no fruit. A giant walnut in the yard where I used to play was festooned with false bittersweet but it never bore a berry. We tried to shock it into bloom by stripping off its leaves, severe pruning, fertilizing it heavily... it was all in vain. Both sexes must be present for fruit.

... *I stand corrected* ...

Until a few years ago, I had called this vine bittersweet... now I must call it *false* bittersweet. That autumn, an amateur botanist and I were returning from a hike down a wooded hillside. Our steep path, at one point, was level with the tops of trees on our right. The upper branches of several were hung with an abundance of the heavily fruited vines.

"Look," I cried, "bittersweet!"

"*Bittersweet?*" he echoed. "That's *waxwork*... although it is sometimes called pseudo- or *false* bittersweet."

"It's a native American," I protested, "what's *false* about it?"

He explained that another plant was also called bittersweet in Europe

long before America was discovered. "That's the trouble with using common names for plant and animal species," he continued. "Here are two plants, completely unrelated, and both called bittersweet. There would be no argument if we used scientific names."

"But those scientific names are such jawbreakers!" I protested.

He shrugged his shoulders.

Well, I looked it up in Grey's *Botany*. The botanist was right. Those vines in the treetops were waxwork or *false* bittersweet; but anyway, the plant is a fine vine and one of the most colorful ornaments for outdoor or indoor winter decorations.

There is only one species of *false* bittersweet in America. It is known to science as *Celastrus scandens*, a member of a small genus of the staff-tree family. It has only two relatives: a Japanese cousin with small round leaves and a Chinese cousin with large, round leaves. Our species bears ovate-oblong foliage.

... *the real thing* ...

Now if there is a *false* bittersweet, there must be a *genuine* bittersweet. Science knows it as *Solanum dulcamara*, but I had known it all my life as the common nightshade. My folks always called it the deadly nightshade and warned us against touching it. It's a Johnny-come-lately that has long been known from Asia, Africa and Europe. It found its way to our shores with the early settlers and is about as unlike waxwork or false bittersweet as two plants can be.

The true bittersweet, alias nightshade, is a member of the potato family with alternate, lanceolate leaves, each characterized by two lobes at the base. Its clusters of flowers resemble those of the potato plant, having bluish, turned-back petals each marked with a green spot and yellow anthers that form a beak in the center of the flower. The flowers develop into a cluster of green berries, each a half-inch; they change to yellow and then to red as they mature. In all stages the berries are glossy, sleek, even lacquered in appearance. Both leaves and fruit are poisonous and the latter are said to taste first bitter, then sweet... hence, bittersweet!



The author, above, poses with his "one for the wall" — heaviest largemouth reported from Hartstown Swamp.

One for the Wall

by Leonard C. Young

After hurriedly piling our gear into the car and tying down the 14-foot flat-bottomed boat to the roof, we pulled out of the driveway at 5:00 p.m. We had all been looking forward to this day because it was to be the boys' first overnight fishing trip. I was feeling especially optimistic because it was a fine fall Friday, and I had read many, many times that this is one of the best times of the year to set a hook into Mr. Bass.

We headed north from our home in

Greensburg, Pa., where I spend much of my time as an elementary school teacher and the remainder thinking about fishing. All too little of that time is actually spent on the water due to the many demands of family and profession; but, each year gets a little better. Little did I know that, in less than 24 hrs., things would be getting *much* better.

I have been fishing for bass for about five years and have had success on only two or three occasions, almost

always on small lakes in other states. My sons and companions on this trip, twelve-year-old Lenny and ten-year-old Ric, had each caught three or four legal-sized bass. In the past two years they had gradually shown me that they were able to fish "all day," so I decided they were ready for something special. That's why the three of us were headed toward the Pymatuning Waterfowl Area in northwestern Pennsylvania.

After a pleasant, leisurely three-hour drive, we found a motel about ten miles from our destination and put up for the night. We awoke around 6:00 a.m., had breakfast and made a beeline down Pa. Route 322 toward the southern end of the Propagation Area. We found and entered the area which I hoped would provide the boys with their most exciting bass fishing yet — a place called Hartstown Swamp.

About four years earlier I had read an article about this region in the *Pennsylvania Angler*. A few years later, while enjoying a family weekend in the Pymatuning area, we stopped and checked out the Swamp. It looked and smelled like *bass*. Now it was September, and we were only minutes away from "splashdown."

We pulled into the small parking area around 8:00 a.m. While unloading and rigging up, I couldn't help but notice how quiet everything was. The silence was broken only by the occasional honking of many geese feeding nearby. Our spirits were high as we pushed off, for everything seemed just right. It was a comfortable, overcast day and I was sure that we were in the right place, at the right time.

Using reasonably heavy equipment because of the thick vegetation and many submerged stumps and trees, the boys and I began tossing plastic worms, weedless spoons, and spinnerbaits. An hour passed without a strike. Another hour went by, still nothing. After three hours of steady, intense fishing, we had not gotten "Strike One," and the boys were quickly losing their enthusiasm. I was beginning to think that this was going to be one of those days when I would keep saying, "Don't give up; you never know when things will start happening."

And so it went. All of us were tired and hungry as it drew near noon. Then it finally happened. Using a white

spinnerbait, I had a solid hit, the first of the day for any of us. After a lively tug-of-war, Lenny brought the net under a 15-inch bass. I released him (which is usually our policy), and we continued fishing the area. Lenny and Ric both got ready; now it was their turn.

At this point, we were fishing off one of the three islands to be found in the Swamp. In the water nearby were two different rows of submerged brush. We were fishing the water between the brushlines and the shore.

A few minutes after releasing the bass, Ric and I happened to be looking toward the bow end of the boat when suddenly the water 30 feet away exploded and a fish came hurtling into the air. I couldn't believe what I had seen. Ric and I looked at each other with eyes wide. It was the kind of fish that I just knew looked much bigger than it really was. After all, we all know how fishermen exaggerate.

For the next few minutes, we continued to fish toward the spot where we had seen the bass jump, apparently in pursuit of baitfish. I told both of the boys to be extra quiet and careful as we moved because "you never know when things will start happening." And happen they did.

I cast the same white spinnerbait about 20 feet beyond where we had seen the water erupt earlier and allowed it to sink to the bottom. I raised my rod to begin the retrieve, and, almost immediately, the lure stopped. Before I had time to even think "snag," my line began to move and I knew I was into something. I heaved hard to set the hook. Then the line began moving again, this time away from the boat, so I just held on. Almost immediately, it reversed direction back toward the boat. There was a sudden, violent pull and my rod tip went down into the water, but then I began to gain control of the situation. After only a few minutes, it was on the surface but completely hidden under a huge mass of rotted vegetation. Lenny expertly dipped the net under this mess and heaved, but I could see that he was going to need assistance, so I helped him lift what seemed like a ton of garbage over the side and onto the floor of the boat. We could see nothing but weeds, but the weeds were moving.

I began to gingerly remove the greenery, for we had yet to see what it

was that had caused this ruckus. As I peeled away the "garden," it soon became apparent that it was, indeed, a fish. Soon something else became obvious, and my heart began to race. I quickly tore away the rest of the covering and found myself staring into what seemed like a cave. I was looking directly into the throat of the biggest bass I had ever seen in my life. It was the kind of fish I had seen pictures of in the outdoor magazines. Except that it was lying at *my* feet, in *my* boat, with *my* lure imbedded in its jaw. I held up the net to get a better look, and then yelled at the top of my lungs. I don't know what I yelled; I just yelled.

Two men in a nearby canoe began paddling over as I began to shakily remove the hook and string this monster. I put him onto our De-liar just as they arrived. The scale stopped at 7¼ lbs. The boys and I just grinned at each other. We then used a De-liar belonging to one of the men. It, too, showed 7¼. Congratulations were offered by the men and pictures taken by the boys. Here was a fish to break our policy. *He was going on the wall!*

Unfortunately, the rest of the day's fishing was a repeat of what had gone before. There was no more activity for the next four hours and then we were chased off the water by approaching storm clouds.

On the way home, we stopped at a sporting goods store in Conneaut. The attendant also weighed the fish, and when the needle stopped moving at 7¼ lbs., he said that, to his knowledge, it was the biggest bass to come out of Hartstown Swamp. How about that!

The fish now occupies a large section of wall in our family room. I often look at it and think back to that day. I have often thought it strange that the fish fought for only a few minutes and then gave up. I also have wondered whether what I caught was what Ric and I had seen only minutes before. It had to be. If it wasn't, then . . .

The trip didn't really turn out the way I had planned it. Lenny and Ric caught no bass that day. But there will be other trips, as many as I can arrange. My sons are "average" fishermen, just as I am, just as you are. If I can catch a fish like that in Pennsylvania, then why not they (or *you*). "After all, you never know when things will start happening."



The access area below Kinzua is small but more than adequate for launching small craft for a float trip.

ESCAPE BY WATER

by Michael K. Simmons

Every resident of Pennsylvania knows the autumn season provides a time of colorful splendor, particularly in the northern mountain regions. Certainly one of the most scenic areas of the state is the valley formed by the Allegheny River from a point just below the Kinzua Dam downstream to Tionesta. The beauty of the landscape does not end there, of course, but the stretch between these points is just about right for a pleasant sight-seeing tour. On almost any nice weekend from the beginning of October until a week or so after Halloween, the roads which follow the river (Rts. 6 & 62) are often jammed with traffic and frequent delays, short tempers, and minor fender-benders are not uncommon as hundreds of sightseers pay homage to Jack Frost's artistry.

While bucking traffic, eating in crowded roadside rests and taking pictures through small openings in the dense forest along the highway may

not prove attractive to you, there is a way to fully appreciate autumn's colors in uncrowded bliss: try floating the Allegheny. If done properly, it's fun; it's rewarding; and, it's safe.

Overnight stops may be accomplished in a number of ways. The Buckaloons is a National Forest campground. Various private campgrounds may also be found along the river. While these facilities cater mainly to highway travelers, their access by boat is relatively easy. For those who prefer more privacy and who are accustomed to primitive camping, numerous islands along the route offer ample opportunity to really get away from it all. Care should be taken, of course, when camping on these islands, or anywhere else, to carry away all garbage and litter so that later floaters may enjoy the natural setting also.

Perhaps not all who may wish to float the Allegheny have the equipment or the inclination to rough it in a

tent. This poses no real problem since there are commercially run summer cabins and lodges along the river. Like the private campgrounds, these tourist facilities are primarily utilized by highway travelers. But, there is really no reason why river explorers could not easily patronize them as well. There is one important hint to remember regardless of the mode of camping chosen. The boat should be hauled well out of the water at the close of day and preferably be tied to something. As stated before, the operation of the outflow gates at the Kinzua Dam makes the river level unpredictable and more than one camper has awakened in the morning to find the water higher than the evening before and his boat gone. This is doubly embarrassing if the camper has chosen an island for his overnight.

Equipment for a floating excursion in the autumn ranges from the necessary to the "nice-to-have." A personal flotation device is required

by law for each person in the craft, with nonswimmers and children under nine years of age *wearing* them. If the boat is a canoe, it is a good idea for all occupants to *wear* PFD's. The depth of the Allegheny changes dramatically and quickly as it follows its course. To be deceived by a calm, shallow stretch of water into thinking the river is never deep or choppy could be a fatal mistake. An extra paddle is also an excellent piece of equipment to have on board. Trying to fashion one from a tree limb after losing or breaking the original is a futile gesture. Insect repellent can save much discomfort as October can be a prime month for mosquitoes. Fishing gear could provide the evening meal since walleye fishing usually picks up in the autumn and the bass and pan-fishing are always good. Fresh fillets over an open fire are a great way to end the day. Last, but certainly not least, a camera provides a great way to record the entire experience. Camping gear will depend upon the type of overnight facility desired; those sleeping in the open should remember the cool temperatures and the increased possibility of precipitation.

Think about it this fall. When you grow tired of football . . . the leaves need raking and the approaching hunting season draws your thoughts

to the woodlands, it's quite possible that a family float trip amidst breathtaking scenery and peaceful solitude could be the memorable experience of the year.

Actually, a float trip on the river may be accomplished almost anytime, from ice-out to freeze-up, but autumn provides the most ideal conditions both in terms of water and beauty. Any trip in the spring should be attempted only by experienced boaters, *using caution*, as the waters are frequently high and always cold. While this stretch of river has been classified as "intermediate" in required proficiency level, there are rapids at certain points along the route that would prove challenging in early spring to the most advanced boater. In contrast, the summer months often find the river relatively low, necessitating extra care in avoiding the bottom in many shallow areas and making progress downriver a bit slow in the larger eddies. The Kinzua Dam has made this less of a problem in recent years but it has also made the river level more unpredictable. Autumn, on the other hand, usually finds the river sufficiently high and relatively warm — a winning combination.

Almost any smallboat may be utilized for making the journey, but the canoe is probably the all-time fa-

vorite. For those not owning a boat, there are a number of outfitters in the area willing and anxious to provide for your needs. Nothing really remains but to embark.

The overall distance from the boat access area below Kinzua to Tionesta is approximately 55 miles and should not be attempted, in any leisurely fashion, in less than three days. At an average speed of 4 mph, fourteen full hours of travel will be necessary.

Combine these hours with time spent fishing, picnicking, setting up and breaking camp, and a two-day trip is a bit of a rush. For those not able to afford three days, an easy alternative is to embark at any of the access areas downriver from Kinzua. A good one is near Irvine at the Buckaloons campground. It might be added that, for those starting at Kinzua, the Buckaloons is an excellent first night stopping place. The campground is right along the river just north of the mouth of Brokenstraw Creek and provides all necessary facilities plus spacious and private campsites. Other access areas along the route may be found at Starbrick (upstream from the Buckaloons), Tidioute, and West Hickory. Upon reaching Tionesta, boaters should paddle to the access area along the left shore at the second bridge (Rt. 62) to disembark.

The Buckaloons camping area combines privacy and the necessary "conveniences" for Allegheny River boaters.



"Man Overboard!"

*It could
happen to you!*

by George E. Dolnack, Jr.
photos by the author

It was early October of last year and weather, the natural force that makes or breaks fishing, was unkind to the anglers casting for salmon on Lake Erie. The wind churned the lake into a froth and chased the boats into a safe haven at Walnut Creek. Small runabouts, almost obscured by the waves at times, came in first.

As I took some photos from my vantage point on the fishing pier, I singled out one boat for a series of shots. Three-foot waves threatened it as it eased into Walnut Creek and safety. Then suddenly, an incoming wave picked up the stern and set it back down. Quicker than a wink, the man at the outboard flipped out of the boat and into the water.

The angler sitting in the center was unaware that he had lost his partner until the cry "*Man Overboard*" went up from the pier. After he saw his pal in the water, he carefully transferred to the stern and turned the boat around for the retrieve. When he killed the outboard, the overpowering wind and waves drove the boat towards the rip-rap. Frantically, he worked at starting the motor.

Meanwhile, his friend in the water discovered that his feet were on bottom and that the water was only chest deep. What a lucky break! Fishermen on shore encouraged him to wade over to the pier where they formed a human chain and pulled the cold, wet angler on to dry land. And, fortunately, the other fisherman got the outboard started in time to avoid the rip-rap.



"Looks like we made it in, Mike . . ."

"Right, Mike? . . . think so, Mike . . .?"





"Mike, are you OK? What happened . . .?"

"Keep cool, Mike . . . I'll get you . . .!"



Firewood Is Where You Find It

by Larry Servais

The easiest outdoor cooking fire to make is one on a propane or gasoline stove. And it is hard to beat for steady, dependable heat in the amount desired.

I'll usually take that kind of fire for preparing a meal, instead of rustling firewood. But on a backpack or horse trip, or on a canoe or a float trip, the extra hardware is just too much. And sometimes in a leisurely camp one enjoys the companionship of a fire, especially on a chilly morning.

I have been building cooking and campfires for 60 years. I have read everything I've come across on the subject for about the same length of time. Many of these articles leave me with the impression that some of the writers copy from one another. They also arouse the suspicion that many of these writers build most of their fires sitting at a desk with a typewriter, rather than in the great outdoors.

For example, whenever I read the advice to cut two green logs about six or eight inches in diameter and about five feet long and lay them parallel about 10 inches apart as a fireplace rest for cooking utensils, I usually look to see just when the book was copyrighted. With possibly rare exceptions, today one just doesn't cut down live trees eight inches in diameter unless he owns the land on which they are growing.

Almost every second article has neat pictures of forked stakes driven into the ground with a pole laid across for hanging kettles. I gave that up way back when I was a Boy Scout. By the time you scrounge around and find the right wood for these, and get them fashioned, you can have the meal half cooked. Besides, the ground is often too rocky to get a stake down far enough to hold. I've cooked in places where one couldn't drive a railroad spike into the terrain.

Over the years I have found that the simplest, quickest and most efficient rest for cooking utensils is two or three rocks properly spaced. If

fairly angular rocks are available, two will do. If not, a third will be needed to properly balance a frying pan or kettle. Usually rocks that will elevate a utensil from four to six inches above the ground are right. The proper procedure is to get the rocks arranged first and the utensil properly leveled, then build your fire.

A separate rest and a separate fire for each utensil is usually the best arrangement. For example, if one is frying eggs you want a rather low, easy fire. For the fire heating the coffee water, you can give it the gun.

When choosing rocks, try to find dry ones, not those resting in a muddy or damp place, and never out of a stream or lake. Rocks resting in a place exposed to the sun are practically sure to be safe. The danger, of course, is dampness inside of the rock that would cause it to explode on being heated.

Where rocks are scarce, use three empty tin cans of the same size to balance any cooking utensil. This is a somewhat more delicate arrangement than with rocks, but in more than 30 years I can remember having only one upset. Beer cans are the ones I usually use. If you don't have your own, you can, however sad to say, usually kick a half-dozen out of the brush wherever people have been camping.

On a week-long musky fishing trip in sandy lake country in Northern Wisconsin, we did all the cooking over nine charred beer cans, three sets. We just kept them in our cardboard trash box when not in use.

The rhetoric on what kind of wood to use for a fire usually lists hickory, oak and maple, in that order. These are all excellent for a steady fire. But in camping, or stopping to cook a meal, one may be hundreds of miles from the nearest of any of these three fine trees. One uses whatever kind of wood is at hand.

An extreme example of this occurred to me several years ago on a fishing trip in northern lake country.

We pulled onto shore after dark, ate a cold lunch and climbed into our sleeping bags. The next morning we were ravenous for a real meal. But I had never seen such a wet, sodden piece of woods as the morning light exposed. Even old stumps were rotting and wet. There wasn't a piece of wood anywhere that one could ignite with a blowtorch.

Finally I found a large downed birch tree. The inside was wet pulp. But I hacked off several large sheets of bark, lugged it to camp and chopped and tore it into small pieces. With this for fuel, we cooked a very hearty breakfast but it was the sootiest fire I ever cooked over!

On another occasion, my son and I were camped at a place on the Big Hole River in Montana, where the only wood anywhere nearby was sage brush. On occasion we had used sage brush along with larger wood. But this time the diet for the fire was entirely sun-baked, dead sage brush. It worked fine.

Usually the advice is given not to use woods that throw sparks. Listed among the offenders are red and white cedar, hemlock, tamarack, spruce and balsam. It is well to know this, but there should be no hesitation about using these woods if they are the most easily available. Any fire should be built only in a safe place, or a place that has been made safe, and should not be left unattended.

One time on a cross-country ski hike a friend and I stopped in a thick cedar swamp for lunch. We picked the place because it offered protection from the wind. We could have hiked or skied up to a nearby ridge for oak or pine for firewood, but here within reach was a plentitude of cedar. We melted some snow in a kettle and tossed in a few bouillon cubes for a hot drink with our sandwiches. After the kettle was off we built up the fire. It snapped and cracked and threw sparks in the snow. It was a rather cheerful sound in the quiet woods. We



Using stones for a dual cooking fire, the author, above, flips a breakfast flapjack.

There is no limit to the variety one can enjoy while afield — even sizzling sausage.



had our packsacks hung out of range.

Starting and handling cooking fires for even heat in the right amount is somewhat of an art. For most cooking tasks, one wants a small fire rather than an eyebrow singer. For broiling, cooking in foil, or using a reflector baker, one needs a fair-sized fire, with hardwood, if any is available.

For most camp cooking with a frying pan, small kettle or coffee pot, a small properly controlled fire does the neatest job.

To start the fire, almost any small dry wood will do. I have started most of my cooking fires by grabbing a handful of small outer twigs from dead branches of evergreen trees.



The coffee brews atop a trio of discarded "brew" cans left behind by litterbugs.

Soup, too, can be heated this way. But, when you're finished, take them with you!



White pine is the best, if it happens to be handy. These are about the diameter of a match stick or a little larger. Just break them into about three-inch lengths, pile them loosely and light. Then put on gradually larger sticks until the fire is the right size.

Some fire builders put a lot of wood over the tinder before lighting. I never do. It usually results in quite a cloud of smoke before all the wood is blazing. It also sometimes results in a larger fire than you want to start your cooking.

A small handful of birchbark is a very dependable starter with small sticks piled on top. In fact, a bit of

birchbark is hard to beat if things are a little damp. However, one doesn't just strip this stuff off the nearest tree and disfigure it. On the larger birch trees there is usually a bit of shaggy outer bark hanging loose, which one can gather with no harm. One can also gather bark from any dead piece of birch.

Cones from any of the pines are easy to light. The outer dead bark of a cedar tree also makes an excellent starter, but shred it a bit before using. If you are low on matches, shred two or three handfuls of this bark by grinding it between two rocks.

If things are pretty well soaked from a prolonged wet spell, one may have to chop up a log or stump for his tinder as well as the rest of the firewood. Even after a hard rain, one can usually find dry stuff close to the base of a big evergreen tree or a clump of them. But when things are damp all over, one has to take an ax and go scouting. In such cases I am always surprised how dry the wood is just under the surface of a piece of dead pine or other resinous soft wood.

In picking a stump or log for firewood, try to find one that is in a spot exposed to the sun, rather than a normally shady place. It will be drier, better seasoned and less punky.

One good stump gave us a comfortable camp one evening on a canoe trip in the Superior National Forest about 40 years ago. Four of us had paddled all day in a steady drizzle. As we landed at dusk on an island in Basswood Lake, one of the members opined that we were in for cold beans and a cold camp. I told him I wouldn't bet my life on it, but I thought I could come up with a fire. While they were pitching the tent, I took an ax and went looking. I found a big, old pine stump, and we were in business.

I very seldom find a need for an ax when gathering wood for a cooking fire. Usually there is enough small stuff lying around that can easily be broken by hand or by coming down on it with a foot. Even the larger pieces snap off when whacked over a rock or log. Most of the time, one can get a supply of wood more quickly and with less work without an ax. If one is a day or more from civilization, possibly the less he uses an ax the better.

(continued on page 21.)

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

FISH FACT: Muskies are loners in the water. They do not travel in schools or roam very far from their favorite hiding and feeding places. This fish needs a lot of food and it will not tolerate others of its species in its territory.

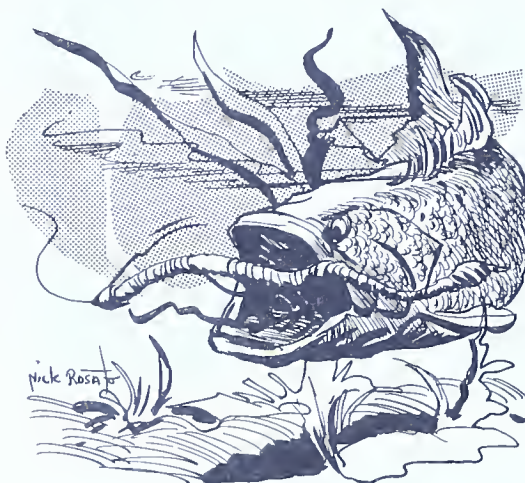
October is a fine month for shoreline fishing for bass. Fewer fishermen are presenting lures and the water has cooled to more comfortable temperatures. Besides, the bass are feeding heavily to store up fat for the winter season.

If you are not attracting fish with a minnow hooked through the lips, or under the back fin, try a minnow hooked through the tail.

"Bottom" in a weedy lake, so far as the fish is concerned, may not be the *bed* of the lake, but rather the *tops of weeds* in a thick bed. A bait or lure fished in such a situation should be worked just above the weed tops, just under the surface of the water, where it will be seen by fish hiding in the weeds. If allowed to sink too deep, the bait or lure may become so hidden in the weeds that the fish will not be aware of it.

An old line is always suspect, even though it is made from modern synthetics. It can develop frays and other weak spots which are not noticed in a casual inspection. Best bet is to discard a line after it has been used a number of seasons, especially if a lot of fishing has been done with it.

In this age of plastics, plugs made of balsa wood are making a comeback. Most of them are floaters but some have metal lips that make them deep runners. All are available in a good range of sizes, shapes and colors.



There is no need to wait for a bass to move off before setting the hook when fishing with a plastic worm. Observations show that a bass attacks the worm from the middle or at the tail, rarely at the head and that the fish takes the worm into its mouth immediately. So, set the hook at the first "tap" signal of a strike.

Six-pound-test nylon makes an excellent fly rod leader in bass fishing.

Don't fish on the bottom for channel catfish; they are not bottom feeders like bullheads.

Vary the speed in trolling deep for muskies and pike. At times move the boat no faster than absolutely necessary to bring out the action of the lure, but from time to time double that speed for short distances. But always troll at least at a speed that enables you to feel the vibration of the lure.

Row slowly and quietly when fishing from a boat. Oars that splash the water and clank in their locks send vibrations into the water and make fish extremely wary.

Keeping records is helpful, particularly of those times and places where the fishing has been good. A chart of weather and stream conditions, the types and sizes of baits or lures used and the results of the fishing can sketch a picture of conditions under which another good fishing trip can be reasonably expected.

Bass take refuge in deep, cool water during the warmest part of the summer, but when autumn temperatures cool the water, particularly in the shallows, bass do a lot of feeding along the shorelines and other shallow areas.

An old bamboo fishing pole is a good fishing tool. Tie 10 to 12 feet of line to the end of the pole and use a short leader to attach a baited hook or lure to the line. Then, reach out with the long pole and fish those little open spaces in lily pads and weed beds that often are hard to reach with modern fishing rods.

Spoons and spinners should be fished deep most of the time, often right down on the bottom, to catch fish in high and roily water.

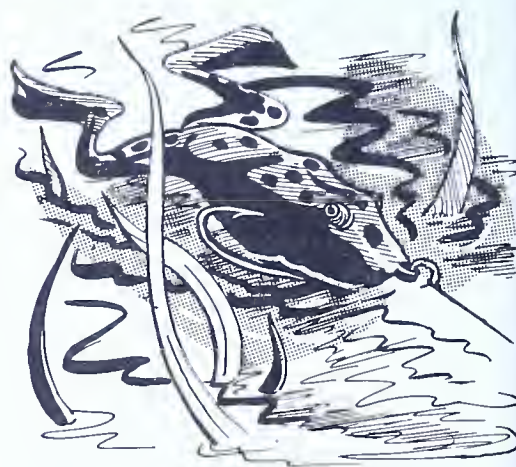
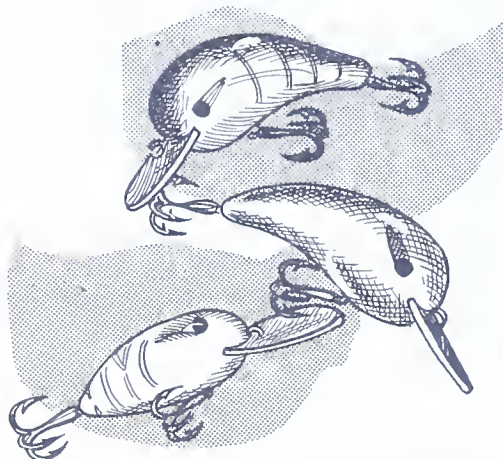
Use lines no heavier than four- or six-pound-test in fishing midget plugs, jigs and spoons. Heavier line will act as a drag on the lure and spoil its action.

Plastic worms four to six inches long are better than the bigger models in fishing creeks, rivers and comparatively small lakes. Use them with very light casting or spinning gear, or even a stout fly rod, and retrieve them gently.

Plugs sink at the rate of about one foot per second, if they are of average size. So a countdown after the plug enters the water gives you a pretty good idea of how deep it will run. Five seconds means roughly five feet, ten seconds ten feet, and so on.

Banana-shaped jigs are the least likely to snag on rocky bottoms.

Rubber frogs are somewhat fragile but they are good bass lures. They are excellent floaters and their thin rubber legs can be made to work realistically. The best models have hooks that ride with the points up, making them virtually weedless when they are retrieved gently on the surface.



Trout feeding in the midst of a hatch of insects quite often literally turn up their noses even at what you might regard as a perfect imitation of the natural. Change to a wet fly or nymph in such a situation. A change of pace in the offerings coming to the fish may be just the thing needed to trigger a rise and take.

Paste floatants for dry flies do a good job but must be applied sparingly to avoid matting the hackles and actually overloading the fly.

Short-shank hooks are tops for use with such baits as hellgrammites, grasshoppers, crickets and very small minnows. These hooks will do very little damage to the bait but will be strong enough to hook and hold a fish.

Avoid excessive false casting. The repeated flash of a rod over the surface of the water can put a fish down. Mopping the fly with a tissue or with a soft cotton handkerchief will absorb a lot of water from it.

Too much slack line on the surface makes it hard to set the hook in a fish taking a floating lure. Some slack in the line is necessary to permit the lure to float naturally but the slack portion should be no longer than can be lifted off the water surface (setting the hook) with a firm lift of the tip of the rod.

Convert a dry fly into a makeshift wet fly by oiling it. It will not float as well as a dry fly, of course, but it will remain just below the surface film and can interest trout feeding on floating insects.

What do you do when a wet fly or nymph completes its downward swing and hangs in the current below you? One good tactic is to retrieve the fly a short distance, then let it drop back down in the flow of the water. Repeat this kind of retrieve until the fly is close and it is time for another cast. Rarely are aquatic insects able to swim directly into even a very moderate current. They struggle against the water or allow themselves to drift downstream.

Properly filling a spinning or casting reel makes it easier to cast a lure accurately. Also, more line will be retrieved with each turn of the reel handle. The line should fill the reel spool to within about a quarter inch of the top.

Take care in putting new hooks on a plug to replace ones that are rusted or bent out of shape. Unless the new hooks are the same size and weight as the originals, the balance of the plug and its action will be changed.

A night crawler or minnow on the hook of a jig makes the lure a better fish catcher, no matter what kind of dressing is on the jig.

A fly rod eight feet long is better than a midget of seven feet for fishing streams that have a variety of currents. The longer rod can reach farther across currents and keep more of the line off the water, reducing the extent to which the floating line causes the fly to drag.

Firewood . . .

(continued from page 19.)

At a public campground in Wisconsin I got onto a way to get firewood with a pole. We had pulled in just in time to cook supper. The only supply of wood provided was some half green aspen logs. The place was otherwise picked clean. There was a lot of white pine there, but the dead lower branches were removed up to a height of about eight feet. Above that there were plenty of small dead limbs for a quick fire. But trying to climb up after them was a rough job that would likely get one's hands and clothes full of pitch. Standing there looking up at this nice dry wood reminded me of the story of the fox and the grapes. However, lying nearby was a slim log about eight feet long that the rangers had not cut up, probably because it was too green. But with this I swung up at the dead branches and snapped off a shower of good firewood. I have used this method several times since, rather than go for a long hike after wood.

One comes across the advice not to use wood lying on the ground because that wood will be damp. From my experience, such wood is far more likely to be dry than damp. It depends on the recent weather has been wet or,

if it is spring or midsummer, and even in what part of the country you are gathering your firewood. It depends on where the wood is lying, if on low, moist ground, or on sandy or rocky soil, and if the area is exposed to the sun. I have gathered as much good, dry firewood from the ground as I have snapped off trees, and with less expenditure of energy.

One time at the public Campground at Fiddler's Lake in the Wind River Mountains in Wyoming we wanted a supply of firewood for an evening campfire. There were some very large logs around that one could chew at with an ax, but that was a lot of work for a small amount of firewood. We took the Jeep down the road a half mile to where a high bank overlooked the road. On top there was a bonanza of dry wood lying on the ground. We tossed it down onto the road and loaded it onto the Jeep. In five minutes we had more firewood than we could chop from a log in an hour. And gathering it was actually fun rather than work.

One time after a bit of early morning trout fishing I stopped to cook breakfast beside the stream at a place that had been used a number of times by campers. There was a ring of stones where campfires had been built. I used two of the stones to support the coffee pot, and two more for

the frying pan. There was enough ground litter so that I didn't bother to gather any firewood. I just stacked a few dried pine cones to start the fire, and then put on pieces of bark, wood chips and small sticks. I cooked bacon and eggs and coffee without even getting off my haunches. When I needed fuel, I just reached out for some.

The trickiest part of cooking over a small wood fire is keeping it burning steadily at the rate desired. Amateurs usually pile on too much wood at one time, resulting in too much flame, then let it die down to where they are fanning it to get it started again. Unless there is plenty of fuel within easy reach, one should gather an ample supply before starting a meal. Once the fire is well started, anticipate its needs, and add one or two sticks at a time. This will keep it going at a steady pace. One good method is to use sticks a foot or more in length and keep pushing them into the fire as the ends burn. If the fire gets too hot, pull a few of them out. However, it is easy to get distracted, and occasionally I have found myself blowing at the coals under the coffee pot, and putting on a handful of twigs to get the fire started again.

Cooking with a camp stove is easier, but cooking over a wood fire, if you have a little know-how, is more fun.

LAW ENFORCEMENT DIVISION —

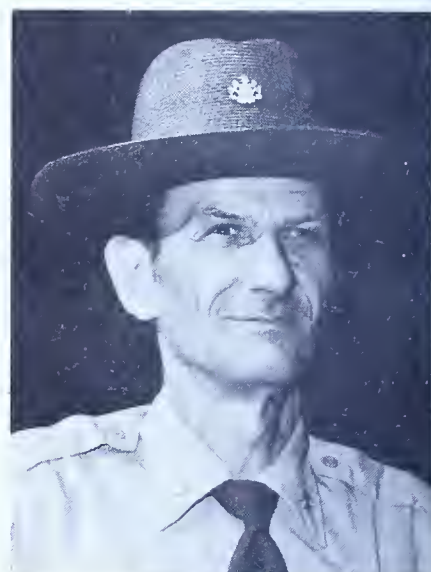
Waterways Patrolmen Retirements, Promotions, Reassignments and New Assignments —



Clarence W. Shearer, a veteran of 37 years of service in a number of assignments, retired in 1978. Shearer served from 1941 to 1951 in Armstrong County, became the Northeast Region's first supervisor (51-53), served in the same capacity in the Northcentral Region (53-57), and served as Venango County Waterways Patrolman from 1957 until his retirement.



Wilbur Williams reported for Fish Commission duty in July of 1950 and served in McKean County throughout his entire 28 years of service.



O. Lee Tilton, Delaware County. Transferred by legislation from the former Delaware River Navigation Commission to the Pennsylvania Fish Commission.



William F. Hartle, formerly waterways patrolman for southern York County, was promoted to Assistant Regional Supervisor, filling an existing vacancy in the Northcentral Region.



Jay B. Johnston, formerly assigned to Bucks County, reassigned to Clinton County, replacing the late Lloyd Wilson.



George Jones, formerly assigned to Warren County, reassigned to Venango County, replacing Shearer.



Barry Mechling, formerly assigned to Allegheny County, reassigned to Beaver County, replacing Parrish.



Donald Parrish, formerly assigned to Beaver County, reassigned to McKean County, replacing Williams.



Stanley Plevyak, formerly assigned to Washington County, reassigned to Bucks County, replacing Johnston.



Guy A. Bowersox, newly assigned to Montgomery County replacing the late Francis Rotchford.



Ronald L. Hoffman, newly assigned to southern York County, replacing Hartle.



Wayne Lee Imler, newly assigned to southern Bucks County, a new district.



Barry J. Pollock, newly assigned to that portion of Allegheny County formerly served by Mechling.



Keith E. Small, newly assigned to Washington County, replacing Plevyak.



William F. Snyder, newly assigned to the Lebanon/S. Dauphin County district, filling a vacancy created by the resignation of Paul Hornberger.

Ashore & Afloat

by Gene Winters

As the boating season draws to a close, many folks will begin "window shopping" the dealers and marinas. Those looking for their first boat and those ready and anxious to trade up. With the great selection of boats out there, finding one should not be too much of a problem. Finding the *right* boat may, however, be more difficult. A little thought beforehand about intended use, capacity requirements, and waters in which you intend to boat may help you make a wiser choice. As a possible guide to aid you, let's take a look at powerboats this month. For reasons of space and their general simplicity, let's bypass the powered rowboat or jonboat this time.

The *Runabout* is still the most popular type around, especially on inland waters. Usually about 14 to 20 feet in length, the runabout is often an open boat although it may have a decked-over bow and often a folding canvas (or even hard) top. It is extremely popular to boaters because of its relatively low to moderate cost and versatility. It is not only useful for boating but for fishing, diving, swimming, and often skiing. It is most often outboard powered although it may be sterndrive or inboard powered, even jet drive. Remote control steering wheel, single gear/throttle control, lounge seat, and other convenience items increase its appeal.

From time to time, boat manufacturers will include a *Utility* boat in their line. This is often a stripped-down version of one of their runabouts. Hull design and resultant stability and handling characteristics (or lack of same) are identical to the runabout. Utility boats are, however,

slowly being squeezed out of the picture, a matter of economics. New safety and construction demands from the public and governmental agencies are making the cost of production vs. sales too unbalanced.

The *Inflatable* is a "boat" whose time has just about come. Large, professional type inflatables (and just as big in price) are becoming more practical for private ownership, especially under selected water, wind, and sheltered conditions. Let me hasten to add I'm referring to tested, "approved" type inflatables, not your ordinary backyard pool variety or the rubber tire tube type we used to float the Swatara Creek many years ago.

The *Deck or Pontoon* boat is very popular in many areas of the country. From my backyard, I can almost see the countless pontoon boats plying the Susquehanna River. They are used for general boating, picnics, shoreline cookouts, or ferrying the family back and forth to a vacation cottage on a river island. Deluxe models are even available with a camper cabin to afford shelter from rain, wind, and sun. Usually outboard powered, they seem to exist in certain pockets of the state more than others. Like all boats, it's important to know their capabilities and their limitations.

The *Houseboat* has really grown in popularity in recent years. Early models lacked power and often could only plough and push their way through the water, often carrying more water inside the living room than was under the boat. Modern versions not only offer sufficient power, but are often built on the same deep-V hull as the manufacturer's deep water cruisers. The houseboat is ideal as a floating vacation retreat and is often used for full-time living on the water, particularly in warmer climates.

When it comes to *Cruisers*, we really get around to variety. Depending on whom you talk to, cruisers range in length from 18 to 50 feet or more. The most popular type today, because of lower initial cost, is the Day Cruiser or Weekender version. The Day Cruiser, as the name implies, is intended for day-long excursions. While it usually offers at least minimal cabin shelter, it is more often a somewhat fancied-up fishing machine. It often comes with built-in bait and fish lockers. It may have V-bunk sleeping facilities. The Weekender

allows you to move indoors more comfortably. In addition to V-bunks, it often sports a convertible dinette for additional sleeping capacity, a sink, icebox, and sometimes an alcohol stove for onboard cooking. The Sportfisherman usually is a more extensive and expensive expansion of the Day Cruiser and Weekender. It is most popular in the 30-35 foot range and really runs the gauntlet when it comes to appointments and fittings. It may be sparsely furnished or outfitted with the ultimate in fishing and cruising accommodations, a flybridge (perhaps complete with "tuna" tower), a cockpit with one or more fighting chairs, bait and fish lockers, trolling and rod storage, etc.

The true *Motor Yacht Cruiser* is hard to define by size. Since each person's outlook is different depending whether you're seated in the helmsman's chair or waving goodbye from the dock, let's just say it tends to be big and prestige is its middle name. Generally, these stately yachts fall in the 50 to 65 foot (and more) range. They usually offer a master stateroom, one or two smaller staterooms, crew's quarters, bar and color tv, generator for full-time power, a huge living room (salon, if you will), radiotelephone, radar, and much more. In fact, the list of standard and option features available would probably fill this column in itself. Not only is the motor yacht at home on Lake Erie on almost any given day, it is in reality a small ocean liner, ideal for travel around the world if you've got the time and inclination. (It goes without saying we assume you have the money.)

The *Funabout*. Ah, the Funabout. I've saved it for last, probably because I'm not quite sure what to make of it and mostly because I haven't been too impressed with the quality and attitude of most of the operators I've run into so far. Early models were primarily outboard powered; the new generation features an inboard powerplant. Newer versions approach a sit-down version of skiing. To be honest, I have not gotten too close to them — I wish I could say the same about them. To date, the few I've encountered seemed to be operated by brash, arrogant, senseless nitwits. (Apologies to all the sane and responsible operators to whom I have not had the good fortune of yet being introduced.) The

A number of types of boats sit at rest in this marina; perhaps one strikes your fancy. Chances are someone who berths his boat here has one for sale. Is it what you've had in mind?



handful I've encountered took great delight in buzzing the boat, seeing how close they could run across my bow, etc. And I certainly hope at least one manufacturer improves on his "dead man's switch" (intended to automatically kill the engine if the operator falls off, etc). During one demonstration of how to buzz a boat at anchor at meal preparation time, the operator fell off and it took 3-5

minutes till the thing shut off; in the meantime it kept circling closer and closer to our hull.

There are still other varieties of watercraft: All-terrain Vehicles, Camper Boats, Amphibious Boats, and what have you. You pays your money and takes your choice. But, since money, particularly if you're using someone else's money, is getting more expensive every day, try to

make your first (or second) choice the *right* choice. Surveys show the average first-time boat owner replaces that boat within two years, usually the result of making the wrong initial selection. So if you don't find your dream boat this fall, don't fret too much. A winter spent studying the market may make you that much smarter when it comes to boat buying time next spring.

Cruiser or yacht? Owners are often the only ones who can pin it down; since it's their money, it's a right they cannot be denied. One thing is certain: you do not tug one behind your car!



Fly Tying

by Chauncy K. Lively
photos by the author

(Author's preface: Our past columns have dealt mainly with the dressing of individual fly patterns. While many of the flies have been fairly simple in construction, requiring more or less conventional procedures, there have been a few patterns which strayed from beaten paths, incorporating techniques deserving of greater explanatory detail than I was able to give in the two-page spread kindly allotted me by our good editor. So it is my intention, at least for a few columns in this new series, to backtrack a bit and explore in depth some rather unique facets of the fly tying process. These columns may be used as reference in dressing future patterns embodying these techniques and, hopefully, will help to facilitate the tying of some of some of our past patterns which may have been troublesome.)

PART I — WINGS SHAPED FROM RIBBED FEATHERS

The use of center-ribbed feathers, cut to shape, has come into prominence in recent years as perhaps the most realistic representation of mayfly wings, particularly in the size range of #8 to #18. There are several methods for cutting wings and the most obvious — shaping with scissors — is the most difficult, due to the soft, unstable character of the feather fibres. The Bennett Wing Cutter (more of this next month) makes a neat job and the Orvis Company has an unusual wing former which holds

the feathers between two shaped metal plates while the excess fibres are burned away. I haven't had an opportunity to use the latter but it is said to produce well-shaped wings. One of the simplest and most effective methods of shaping cut wings is one developed by Poul Jorgensen, utilizing an ordinary toenail clipper as the cutting tool. These clippers are widely available in drugstores and cutlery departments, generally at reasonable prices. When selecting clippers be sure to ascertain that the cutting edges meet, when closed, along the entire arcs of the blades. If they are even slightly askew they will not cut thin materials uniformly.

Cut wings may be fashioned from a variety of feathers but generally, those with webby fibres hold their shape best. Feathers with fibres which extend out from the center rib at an angle of forty-five degrees or greater will permit forming a broader wing than those with fibres lying along the rib at a lesser angle. The mottled feathers from the back of a ringneck pheasant are ideal for wings representing some of the darker Stenonema species, while wood duck flank or breast feathers are fine for the Cahills and light Stenonemas. The small shoulder feathers from mallard and coot wings furnish delicate shades of dun which match the wings of many mayflies. The large hackles from hen necks are available in many colors and shades to meet almost any requirement. Most feathers are slightly concave on their dull sides; this is Nature's way of ensuring that the feathers cling close to the bird. However, if feathers show any degree of twist they should be avoided because they are certain to cause leader twist in casting.

Since most feathers have fibres extending beyond the tip of the center rib, the first step in fashioning clipper-cut wings should be to squarely cut off the tips of the feathers with straight scissors. Then the effective wing height is measured along the length of the hook and the excess bottom fibres are stripped off. The wing height should equal the overall length of the appropriate regular-shank hook, from the end of the eye to the outside of the bend. Fly Fisherman's Bookcase of Eugene, Oregon markets a handy Mayfly Proportion Chart which shows actual wing sizes for all the major

mayflies, correlating each to its proper hook size.

Most feathers have a natural curvature which causes the tips of matched pairs to bend away from each other when held back-to-back. For this reason it is more feasible to shape the wings individually. Just remember to make a right and left wing for each pair, one the mirror image of the other.

The shape of the cross-section of the center rib should determine the method of setting the wings. Close examination will show that the ribs of many body and shoulder feathers are oval or flattish in profile. With these it is easiest to set the wings in their upright position with the ribs straddling the hook. On the other hand, hen neck hackles generally have round ribs of smaller diameter and wings of these feathers are better set by holding the wings parallel to the hook and binding the stems along the top of the shank. Then the wings are pulled upright and set with turns of thread. In either case a bit of bare stems should show above the shank to allow room for thorax dubbing. A drop of hard-drying cement (Duco, Ambroid, etc.) applied to the stems at the base of the wings will hold them in position.

Because of their broad surface, it is essential that cut wings be set perfectly straight; otherwise, the fly will spin and twist the leader. But it's really not difficult to achieve good alignment if care is exercised. The trick is to keep checking the alignment from the front of the hook, making necessary adjustments as the cement sets. Simply sight along the hook, from front to rear, until the bend appears in the eye; then if the wings appear as thin slivers you may be assured they are straight.

Despite their fragile appearance, cut wings are quite durable and will withstand a great deal of trout abuse. After extracting the fly from a trout's jaw I use my bandana as a blotter to remove most of the moisture from the wings. Then I blow on the fly to fluff it out. Finally, I check the wing alignment by sighting along the hook and make any corrections necessary by twisting or pulling the wings into the proper posture. Then the fly is ready for new conquests.

Next month we'll discuss shaped wings of quill sections and an interesting synthetic wing material.



SHAPING & SETTING CUT WINGS:

Left — Webby feathers are best for cut wings.

Right — Select a pair of feathers larger than required for wings. (Pheasant back feathers are shown here.) Match feathers together and cut off tips with straight scissors.



Left — Wing length should be equivalent to overall length of regular shank hook. Measure paired feathers against hook and strip off excessive lower fibres.

Right — Hold one feather by its stem, with concave side toward you, and make a shallow cut with nail clippers. A second cut may be required if wing is longer than the width of the clipper blades.



Left — Turn the feather around with cut edge to the left; then make an angled cut to form wing's trailing edge. Next hold the other feather with convex side toward you and repeat steps 4 and 5. You should now have a perfectly matched left and right wing.

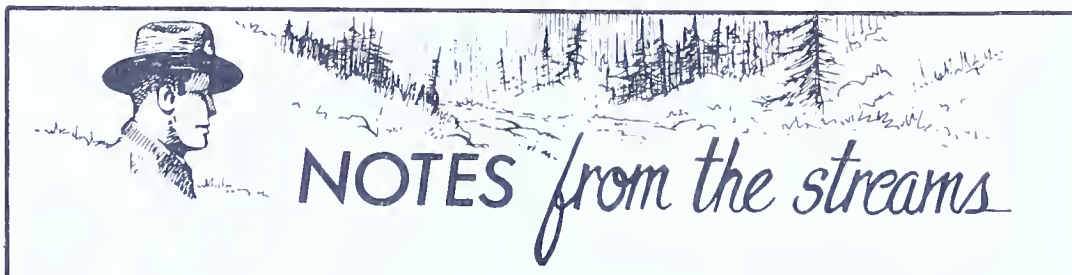
Right — Hold wings upright in position, back to back, with stems straddling shank. About 1/16" of bare stems should show above shank to permit thorax dubbing. Secure with several figure-8 turns of thread around stems. Then bend stems back under shank and bind. Apply a drop of cement to stems at base of wings.



Left — Check wing alignment by sighting from eye of hook to bend. Make any necessary corrections while cement is setting. Now you are ready to complete your fly.

Right — A few examples of cut wing dry flies.





BONANZA

On a recent three-day fishing trip my wife, my teenage fishing buddy and I caught and released in excess of 150 fish, eight inches or larger. Species included a few sunfish, bluegills, rock bass, fallfish, smallmouth bass, walleye, suckers, carp and catfish, as well as a healthy share of trout for each. We used spinners, some minnows, and eleven dozen night crawlers. Fished in the middle of the day for about eight hours each day and fished one of Pennsylvania's scenic mid-state rivers. Most of the fish were caught under a bridge in one hole. If I would have had more time, I feel certain I could have proved that every hole in each of the northcentral's major rivers could produce equally well. To do this I would have to retire now at 29 and live to be 1000, fishing every day!

Every day, while patrolling I have to listen to tales of how good the fishing is "here" or "there." You'll never convince me it is any better than in "our own back-yard."

Robert Lynn Steiner
Waterways Patrolman
S/Luzerne County

PROFICIENT!

Apparently our trout stocking program in Greene County is benefiting more than just our local anglers. A pair of Ospreys was sighted around Ryerson Lake prior to the opening of trout season and I have been keeping a close watch on them. Recently, while on a routine patrol on Enlow Fork, which is only a couple of miles from Ryerson Lake, I spotted one of the Ospreys perched in a dead tree overlooking the creek. I was admiring the beauty of this fish-eating predator, when it suddenly dove from the tree into the stream and came up with a fish clasped in its talons. Through my binoculars I could make out the white underside and olive sides of about a nine-inch rainbow trout. I wonder if our local anglers are aware of the fish-catching ability of some of their natural competition.

Gary E. Dieger
Waterways Patrolman
Greene County

TRY TOPPING THIS ONE!

It was about a half hour before the opening time of 8:00 a.m. on the first day of trout season and Deputy Ralph Gambler was keeping an eye on an area of Jordan Creek in Allentown. A couple of anglers approached him, pointed to a man upstream and said that they had seen him fishing. According to these witnesses, the man had caught a trout but had released it.

Deputy Gambler approached the man with this information, asked if he had been fishing and if he had caught a trout. The fisherman said that he had caught a trout. But, it was an *accident*.

It seems that he had his rod strung up and baited, rested it on a forked stick with the bait dangling over the water. Wouldn't you know it, a trout saw the bait and jumped out of the water, hooking himself on the man's line.

When this same gentleman called me to explain the circumstances, he had another story. He told me that his buddy said that they should not fish in that particular area since the water was too shallow. So, to determine what the water depth was, he threw in his hook and sinker — but the hook was not baited. A trout took it anyway! We had stocked a lot of trout in that area; but, not so many that they would be jumping through the air for a worm or biting on bare hooks!

Fred Mussel
Waterways Patrolman
Lehigh County

COOPERATION COUNTS

Last spring, before an inseason stocking of Patterson Run, Glade Run, and the South Fork of Pine Creek could get started, the power steering unit on the fish truck broke and the truck returned to Kittingan for repairs.

During the 2½ hours the truck was being repaired, a prearranged plan was placed into effect that covered such an emergency. Deputies Bowser, Hetrick, Rearick and Verner loaded a 300-gallon stainless steel fish stocking tank built by the Pine Creek Sportsmen's Club for stocking their Cooperative Nursery fish in local streams. The tank holds about 500 fish, if weather conditions are cool, with

little problem. The deputies, using the tank and Deputy Verner's pickup truck stocked Patterson Run and Glade Run before the fish truck was repaired.

Considering the fact that the deputies had no fish truck followers that day, both streams were stocked in the 2½ hours it took to repair the fish truck. But it would have taken a normal 4 hours for the fish truck to stock the same fish.

With the cooperation of the Pine Creek Sportsmen's Club and the Armstrong County Deputies I personally feel that we may have prevented a disaster with dead fish and I want to say "thanks" to the men and Pine Creek Sportsmen's Club for their help.

Jim Smith
Waterways Patrolman
Armstrong County

"... HAVE EYES AND SEE NOT"

I met one of those fishing and hunting slobbers the other day! You know, the guy whose utter disregard for everything ends up costing you and me. He happened to be fishing in a Fish-For-Fun area with spinning rod and bait, which is prohibited. His automobile was parked only four feet from the sign stating the regulations, so I asked him if he had read it. He stated he had no read it because he thought it was only "farmer sign!" I asked, "What's a 'farmer sign'?" He said, "you know, one of those 'No trespass signs'!"

Terry Hannold
Waterways Patrolman
Northampton County

"KNOW-IT-ALLS"?

People call my residence asking for all type of information and most of the questions can be answered. Sometimes, however, we just don't have the information the caller wants and you would be surprised how irritated they get when we don't know: the cost of a nonresident fishing license in Alaska; when the salmon season starts in Nova Scotia; or, how the fishing is for lake trout on the Finger Lakes in New York State!

James T. Valentine
Waterways Patrolman
Huntingdon County

"... START YOUR FISH"!

Al Boyer, Secretary of Lycoming Creel Anglers COOP Nursery related this story to me the other day. Seems he had a visit from a gentleman who stopped at his place of business and said, "I heard the club had

built three new fish raceways and was interested in knowing when the club would hold their first fish *race*." Al took the gentleman's name and phone number and promised to phone him when the first "race" was to take place.

James H. Lauer
Waterways Patrolman
Lycoming County

NATIONALLY KNOWN VISITOR

Earlier this year while patrolling the shore of the Shenango Lake, I noticed a large object on a stump at water's edge. Having never seen this on patrol in this area before I was curious. As I watched, the object moved several times. Wanting a better look I used my binoculars to find out just what this object was. To my surprise the object turned out to be a bald eagle, the movement was caused when the eagle would take another bite of the fish it was holding in its talons. While reflecting on this scene I wondered if the fish had been caught or found on shore. Oh well, it really doesn't matter. All God's creatures will be provided for — they all have a place in nature's plan.

Larry V. Boor
Waterways Patrolman
Mercer County

TOSS-UP!

While on patrol along an area stream I noted four persons dressed in "jungle" costumes, complete with khaki shorts, pith helmets and butterfly nets. After a short period of observation I addressed them and asked just what it was they were after. I was told that they were running a periodic entomological survey for the New York Museum of Natural History. They then reciprocated and asked what my official function was. I explained that I also hunted and identified "insect pests." That is, I was conducting a foot patrol in search of "Litterbugs." I am not sure who thought who was the "buggiest."

Robert Lynn Steiner
Waterways Patrolman
S/Luzerne County

RIGHT PLACE — WRONG TIME

While about to set up a display at the Shenango Valley Mall, I became the victim of circumstances by being in the right place at the wrong time.

This particular day had been chosen by the mall as the day to start towing vehicles from the "NO PARKING" zones. I was standing on the curb watching a wrecker driver hook up a car to be towed away

(while waiting for Assistant Supervisor Hollen to arrive with the display unit) when an individual drove by and shouted from his car, "It's about time you did this — tow them all away!" I looked around to see who he was talking to but *I was the only one there*, except the wrecker driver, who was out of sight under the car! Why me Lord? I'm one of the good guys.

Larry V. Boor
Waterways Patrolman
Mercer County

"LET'S EAT...!"

Last month our son Ronald wanted to go with his dad to a sportsmen's club meeting. Being he is now 10 years old, Jim decided it would be alright. Jim was the guest speaker, so at the end of his talk the men there asked numerous questions. Finally, after about 45 minutes Jim asked if there were anymore questions. In the back of the room a hand shot up, "No more questions — let's eat chili," came the reply — it was Ronald.

Kathryn Ansell
Deputy Waterways Patrolman
Fayette County

STRONG ECONOMICS

A study made by the U.S. Fish & Wildlife Service reveals that hunters and fishermen are spending more than 20 billion annually to pursue the two sports. The study, made in 1975 but only recently released, shows that hunters spent 478.6 million days and 5.8 billion dollars, and, hold on to your hat, anglers laid out 15.2 billion dollars to fish 1.3 billion days. That's a total for the two of 21 billion dollars for 1975.

As an economics major in college in my early years, I can appreciate the contribution these monies make to the total Gross National Product of these United States in any given year. It is also easy to see that this "economic clout" is a must to consider in any environmental study particularly to those projects that are termed "in the name of progress...."

Bernie Ambrose
Waterways Patrolman
Elk County

BIG DAY —

On 5/17/78 I had the opportunity of working in the field with Richard Nilson and his Ecology Class from Valley Grove High School. The day was wet, rainy and windy but it did not dampen the spirits of

the class. We started with the demonstration of the electroshocker then did a little fishing, filleting and cooking of part of the catch.

Total catch for about three hours' fishing was:

7 bluegills
16 perch
1 chub
3 bass — returned
1 walleye 19½"

237 crappies

The class contained 10 students, Mr. Nilson and me. Mike Mewes, a foreign exchange student from Germany, caught the most fish along with the walleye. Mike told me he has caught several walleyes in Germany but never a crappie or bluegill.

Cloyd W. Hollen
Assistant Supervisor
Northwest Region

ADIOS AMIGO

At 3:55 a.m., I received a telephone call that woke the entire family, from a man who stated his name was Bill Wilson. Mr. Wilson wanted to know if I was going to stock trout that day. I asked him why he had called me at 3:55 a.m. for that kind of information, and he stated he didn't even know it was nighttime or even dark outside. After I "politely" told him where he could go to find a fish truck at that hour of the morning, he gingerly said, "Adios Amigo" and hung up. Don't think for a minute I didn't look for a sleepy-eyed Mexican named Bill Wilson all day after that!

J. R. Smith
Waterways Patrolman
Armstrong County

FISHED OUT?

During the Spring of 1977, Long Run Creek received its very first trout stocking. Initially, there was a great flurry of activity along the stream, resulting in some fine catches. Then, as the season wore on, the nibbles dwindled and the interest began to fade. All summer long comments such as the following were heard:

"There's no trout left"
"They all swam down to the river"
"The water gets too low in the summer"
"Raccoons got 'em all"

Needless to say, I was skeptical. So, in late October I walked quietly along this "fished-out creek" and counted *eighteen* feeding trout.

Bob Johnston
Deputy Waterways Patrolman
Allegheny County

(continued on page 31.)

More Leaky Boots . . .

(continued from page 3.)

BIG OPENING DAY!

While fishing Lake Arthur on the opening day of bass season, I had the experience of a lifetime.

My uncle, Daren Conroy, and I arrived on the lake at 5:30. He caught three very nice-sized bass and I caught a smaller bass and a 26-inch northern — all by 10:30. At 11:00 we decided to do a little drifting with shiners. As we were drifting, we got an occasional snag here and there, but a simple pull would free them. A half-hour passed without any action and I was fading, when my rod started to bend. I figured it was another snag and started pulling; but, what I didn't expect was for it to pull back. The fish stayed under for a while, suddenly exploding with gills flared, and shaking violently before returning to the water. When we saw that, my uncle yelled "musky," which I thought, too, because of the size of the fish. When we finally netted the fish my uncle turned to me and said, "I can't believe it — it's a bass!" He went to take the hook out and the shank broke on the hook. He then handed it to me and it broke again. After that, I had to sit down.

My uncle kept kidding me, threatening to throw me off the boat because I caught a bigger fish than he did, twice! Later in the day though I think he was satisfied when he caught two more bass (including a three-pounder!) and a 27-inch tiger musky which he returned for next year.

I am very proud of my bass which came in at 21½", 5½ Lbs., but I feel most of the credit should go to my uncle whose boat and bait we used, and obviously to the Pennsylvania Fish Commission.

GEORGE RAGAN
White Oak

LOSE SOMETHING?

I recently was on a camping trip in Sullivan County. To make this letter short, a few friends and I went up to High Knob Lookout above Worlds End State Park. On our way up to the lookout I found a tackle box full of lures. I consider myself a sportsman and would be upset by losing just one of my *few* trout lures. So I am writing to see if I can return the tackle box to the owner. We found it on the road. So, I picked it up and we asked around but no one lost one.

If he will write me and describe some of the tackle that was in the box, I'll gladly send it to him. Thank you.

JOHN NEWPHER
R. D. #1, Box 262-A
Fleetwood, Pa. 19522

"REAL LUCKY . . ."

The picture shows me at my height of glory. I haven't a care in the world when I am fishing if I catch anything or not but I have been real lucky at fishing and hunting. My son tells me he takes me along just for luck. I love to ice fish as well when the weather gets a little nice.

BETTY GHANER
State College



MORE ON THOSE "DOGS" —

In answer to George Grice on dogfish, I used to visit Gun Lake, Michigan, around 1912. One day a man at the hotel brought in six of them . . . speared them in shallow water and bulrushes. I asked him what they were and he said dogfish.

R. H. LA FOUNTAIN
Upper Darby

DISQUALIFY THEM?

I enjoy reading the *Pennsylvania Angler*. There is one comment I would like to make concerning the FISH-FOR-FUN and the FLY-FISHING-ONLY sections in the state.

I think that streamers should not be used in these waters as a streamer represents a minnow and does not belong in any of these waters. Ask any real fly fisherman and he will tell you they are not related to flies. If they are used they should not be tied on hooks larger than a No. 12 or 10.

MILLARD W. WOLFE
Weissport

And the Royal Coachman . . . it represents and is related to *what?* Ed.

COOPER SPINNING FROG?

About twenty years ago I bought just one "Cooper Spinning Frog." The plastic body is one inch long and painted white, yellow and green. A triple hook hangs from the belly and four real deer hair legs protrude from the body. This lure is *not* a

real good "killer" for largemouth bass. It takes a lot of patience for a strike; but, when one does hit he's at least fourteen inches. Just recently a bass I would guess to be about sixteen or eighteen inches really engulfed my Cooper Frog, dove down and snagged my line on a limb or rock and broke the line. I have not seen or heard of a Cooper Frog for sale anywhere for many years. So if anyone has one or more to sell, I would be glad to buy. Or any leads or information would be appreciated. So, check your old rusty and dusty fishing lures, fellas, and write to me.

FRANK MIHALICIK
6 Brown Street
Ashley, Pa. 18706

LAB PAL—

Enclosed please find a check for a three-year subscription to the *Angler*.

I read with great interest the article in the May issue about "Widgeon" by Don Shiner. I, too, am familiar to many people on Western Pennsylvania streams with my old Lab, "Mr. Cid." We go back almost 13 years. I must confess that on two separate occasions on two different tributaries to Lake Erie, old Mr. Cid, (C.I.D. means "The Lord") ran down and caught two salmon and happily retrieved them from the shallow riffles. I'm sure that if Mr. Ely were around, I'd still be in jail. I hope Cid and I can be forgiven.

Like Don Shiner, it sure is a great pleasure to see a faithful companion out on the Slippery Rock, Neshannock, Kettle, Caldwell and the Sinnemahoning.

KENT MILLER
Canfield, Ohio

"BEST SPINNING REELS"?

Some friends from my school and I are always waiting for a new *Angler* at the end of the month because we always read the new one in about two or three days. We wish you would send some tips on spinning and the best spinning reels to buy.

Usually you have someone on the cover with a fly rod in his hand and in the whole magazine nothing about spinning — we could use it.

KEVIN NEWELL
Philadelphia

We have never made a specific effort to feature fly rods or exclude spinning rods on our covers, Kevin, although it might have appeared that way. There have been spincasters galore in our photos over the years. We cannot, understandably, endorse "the best spinning reels to buy." Such information can be gotten from a reputable tackle shop or from a fisherman of many seasons. Ed.

CHARGE!

On July 5th, when we were fishing in Lake Nockamixon, our boat was practically attacked.

At first it appeared to be a very big and ugly snapping turtle, or a huge snake, but as it got closer we realized it was a musky of about 3-feet, swimming with its head out of the water straight for us! We were too surprised to try to throw our lures in its open mouth and it dove back into the depths.

Did this fish have too much to drink? Was somebody feeding it or what? Any suggestions?

DAN VERNON
Havertown

It's doubtful the musky had too much to drink, Dan, but before making any "suggestions," suppose we take a sniff of your thermos? Ed.

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Stream Notes . . .
(continued from page 29.)

TAKING NO CHANCES!

While on patrol along the Juniata River above Lewistown one evening I came upon three fishermen fishing from shore for carp and catfish. As I approached the trio sitting together on the shore I noticed in the darkness that each had heavy ropes tied to stakes driven in the ground at their sides. The ropes appeared to lead into the water. I thought I would see three stringers of fish as I came up to check them. I found out that the ropes were tied not to fish but to each of their rods. It appears that they had been fishing a few nights earlier and had lost one rod and almost another one when fish had struck and pulled the gear into the water. They were taking no chances this time, firmly anchoring their tackle to terra firma!

Larry R. Baker
Waterways Patrolman
Mifflin/Juniata Counties

NISE (?) OWL . . .

While on patrol of Lake Winola at about 11:00 p.m., accompanied by Deputy Osterhoute, we came upon an Ivor Jones of Dunmore who told us an owl had picked his jitterbug off the water and flew off with it and part of the line. He said he had heard it thrashing around in the trees but couldn't find it.

We assisted him in the search but didn't find it either. Several days later I received a letter from Mr. Jones who informed me that he went back the following day, in the daylight hours, and found it tangled in the brush, freed it and it flew away. Too bad the bass were not as hungry as the owl!

Stephen A. Shabbick
Waterways Patrolman
Wyoming County

WILD GOOSE CHASE!

Vandalism not only costs us all a lot of money but also can cause embarrassment and frustration to others. The embarrassment was caused to a Federal Agent patrolling East Bangor Dam during duck season. He was patrolling with a 50 HP outboard motor on his boat and didn't know it was "Electric-Motors-Only" because some slob removed the entire bulletin board during the night! Frustration came in the form of one Waterways Patrolman who didn't know who he was and chased him around a few hours in a row boat!

Terry Hannold
Waterways Patrolman
Northampton County

MOVED RIGHT IN!

Deputy Waterways Patrolman Ed Dixon and I assisted the State Police in the recovery of a stolen vehicle that was driven off the roadway into Raystown

Lake. Scuba divers attached the cables and a tow truck winched the vehicle from the water. Immediately officials began searching through the vehicle to see what clues might be found inside. They found a variety of things including two crappies which had taken up living quarters inside the cab. The fish were quickly transported back down to the water and released to search for a new home.

James T. Valentine
Waterways Patrolman
Huntingdon County

FINE EXAMPLE!

This past spring I had an unusual case concerning a fish law violation. The reason it is so unusual is that a concerned sportsman dared to become involved. Once in a while I'll have someone come to me and give information in regard to a violation they observed. When I tell them that they might have to appear as a material witness, that's generally where everything comes to a halt because they don't want to get *that* involved. Well, this sportsman I'm talking about observed an individual with a largemouth bass, approximately 18" long, in closed season. He was able to provide me with the necessary information needed in prosecuting a violator and in this case the violator paid for his illegal act — thanks to the concerned sportsman!

Robert L. Kish
Waterways Patrolman
Cambria County

Bait Up...

(continued from page 7.)

with one hook in the thorax and one in the tip of the abdomen. They are best fished on the surface around stumps or drifted over underwater snags. They are also very effective (alive or dead) when used with a long pole and lightly skittered or dabbed across the surface. This imitates the female laying eggs and is a killer for big bass. Dead Dragonflies should be drifted on the surface and retrieved slowly while rapidly vibrating the rod tip to simulate an insect that is trapped and struggling in the water. Float them on quiet pools, gently setting them on the surface and letting the current carry them downstream, then retrieve them with the rod tip up using short, rapid twitches.

Adult Damselflies are too delicate to cast and must be fished on very light tackle. From shore or a boat, simply dance the insect (alive or dead) across the surface around logs and brush. You will pick up a lot of panfish and an occasional bass. If this type of fishing appeals to you, collect Damselflies and dry them for future use. They require no special handling and, if left in the open air, will dry in one to three days depending on the temperature and humidity. These dried specimens are quite brittle. To soften them and make them stay on the hook longer, place them in a jar with some damp rags or paper for about twelve hours. Don't leave them in this softening jar for over twenty-four hours or they will start to mold.

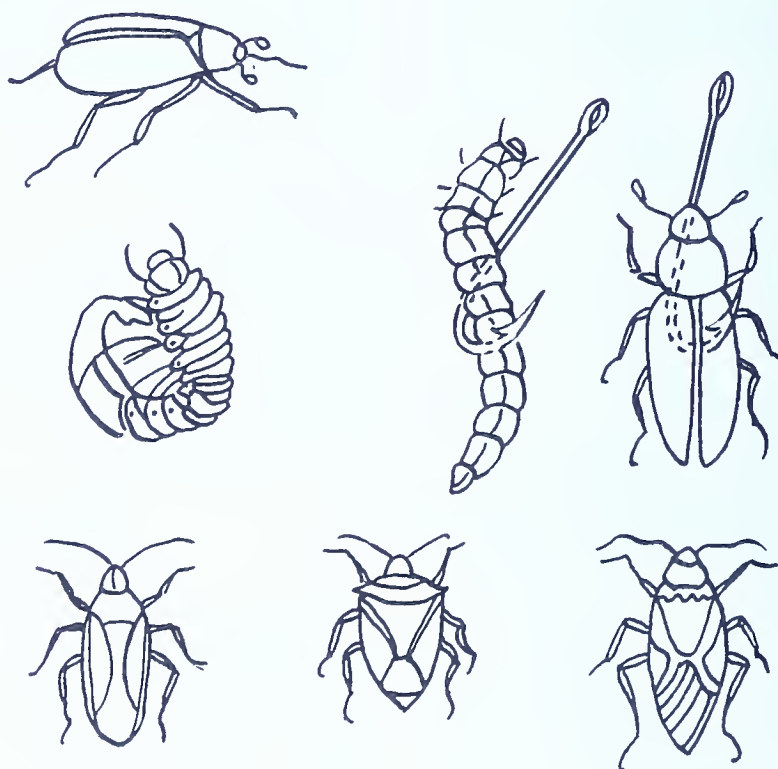
TERRESTRIAL BEETLES

The insects anglers commonly refer to as "grubs" are usually the larval stages of beetles belonging to the family Scarabaeidae. This large group contains over twenty thousand species including the June bugs, May beetles, Japanese beetles, Dung beetles, and the sacred scarabs of Egypt. The larvae are usually white or yellowish-white, with a soft body and a brown or black head bearing strong jaws. The body generally has a fat, wrinkled appearance and the larvae will most often be found lying on their sides, curled around so that the hind end is almost touching the legs.

They live in almost every conceivable habitat and are most common and easily collected in the spring. Search for them in decaying wood, excrement, under cow pies and underground. Many live just under the sod where they feed on grass roots and, if numerous enough, can completely ruin a lawn. Collect them by digging up a trowelful of dirt where you see small brown patches in the sod.

The best way to hook grubs is to take the size hook that fits the grub, run the hook through the ventral side with the curve of the body and then push the shank of the hook into the jaws. The grub will immediately

It is difficult to simulate natural conditions well enough to raise grubs artificially on a small scale. Manure-feeding species can be encouraged to start a colony by transplanting wild grubs into a box of fresh manure and keeping it warm year-round so that the insects will mature and breed. It is much easier to pick up a large number of them in the spring (any good pasture will yield a couple of hundred) and store them in moist peatmoss in a cold refrigerator. They will keep all summer. If you don't want to take the time to gather or dig your own grubs, they should be available from any large scale bait dealer. Grubs can be



clamp onto the shank, and be almost impossible to get off. For best results fish grubs deep! Keep them just off the bottom, or on the bottom, occasionally raising them a foot and letting them settle back down. Grubs also produce when fished from a bobber. For serious panfishing, use two hooks twelve to eighteen inches apart with a grub on each hook. You'll be surprised how often you bring in doubles.

When digging grubs in late spring and early summer, you will find many pupae (the resting stage of development between larvae and adult beetles), hook them through the body and fish them just like grubs.

preserved indefinitely by freezing them.

All adult beetles are suitable for bait. They can be caught with a butterfly net, or collected by hand around lights on early summer nights. During the fall months, many species of beetles will be found congregating on specific plants like goldenrod and milkweed. Keep them alive by refrigerating them, or let them dry for future use. Hook adult beetles through the back between the wings. While they will produce when fished with a bobber, they are much more effective when drifted on the surface or bottom.

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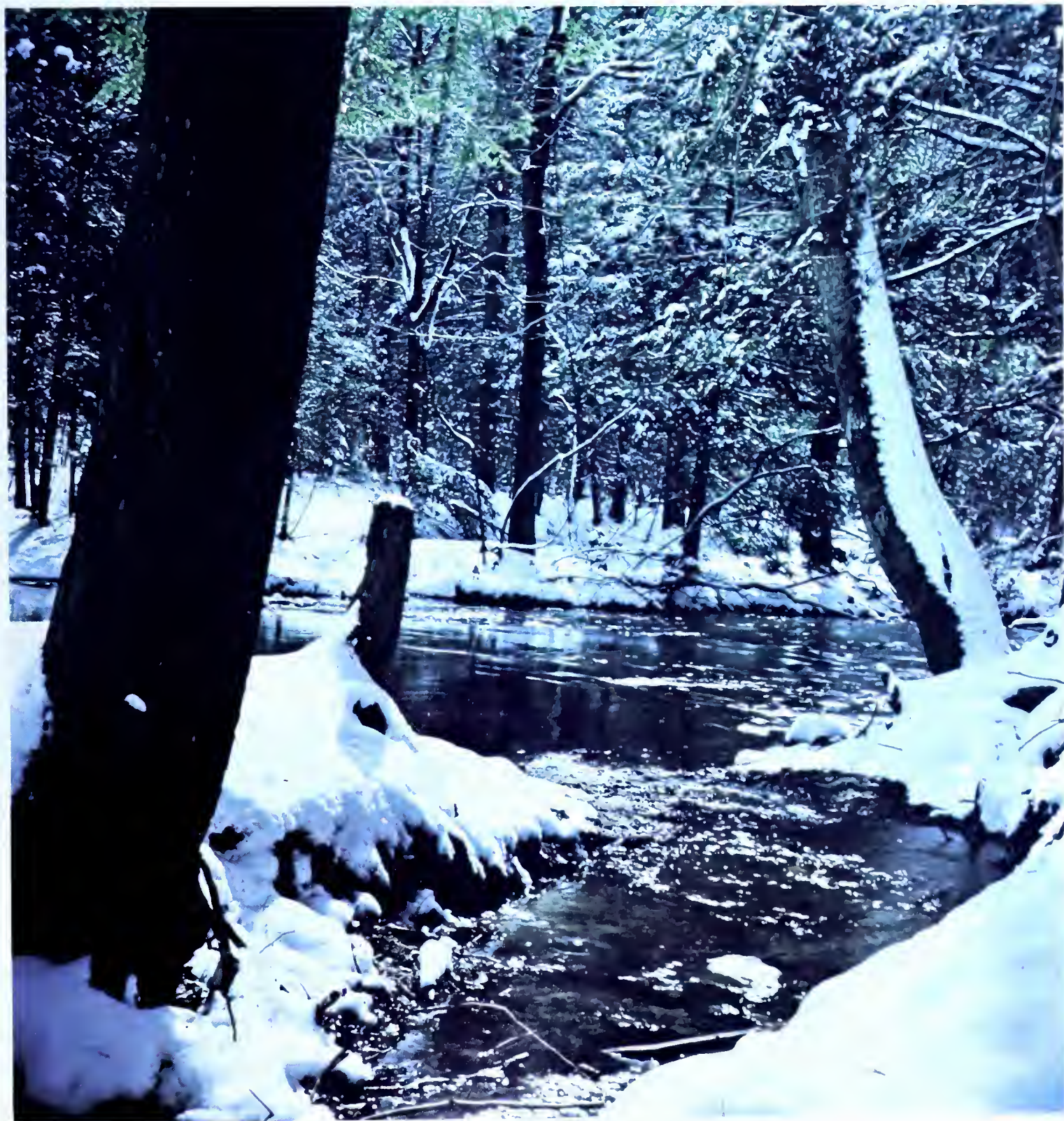
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NOVEMBER—1978

Angler

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FOREBODING...

When Proposition 13 was voted in California and won by heavy majority, its authors announced that they would push for the same exorcism across the entire nation. With or without their efforts, it is easy to sense a broad-scale dissatisfaction with both state and federal governments, aggravated by rising inflation, and the revelation of what seem to be unprecedented levels of corruption.

A parallel type proposition, Proposition 12, has been brought out in Pennsylvania, which would require a change to the Constitution. We have seen a nasty side to this promotion as hundreds of unruly demonstrators swarmed through the halls of the Capitol, shouting obscenities, blowing air horns, and disrupting the work of the General Assembly to the point where they had to be physically thrown out by the Capitol Police. Demonstrations such as this should make us all wary of the ramifications of their proposals. Quite often the demonstrators are really pushing for their own self-interests, and the bottom line would mean a change in priorities. The makeup of the mobs gives you the clues needed to figure out whose axe is being ground and, inevitably, acceding to their demands would detract from other programs. Extremes attract extremists.

If government is ever based on weighted values that are judged on how big a mob can be bussed to Harrisburg (or Washington), the size of the signs they carry, or the noise they make and the disruption of normal government, then we have come to a sorry stage in our history. In an election year, particularly, champions for these causes can always be found.

This phenomenon only further emphasizes the wisdom of retaining the independent agencies that Pennsylvania still enjoys in its Fish Commission and its Game Commission. While responsive to their stockholders, over the years these agencies have been able to, by and large, manage the resources for which they are responsible in a professional manner, while respecting their accountability.

You can see what you pay for in the facilities that have been acquired and developed mainly with license money. Take time to talk to your District Waterways Patrolman — encourage him in his efforts to nail the slob fisherman, detect pollution, and enhance landowner relationships. Stop in at a number of fish cultural stations, many of which are equipped with attractive visitors' centers. Talk to the unsung heroes, the men behind the scene where work goes on around the clock, seven days a week — often in very uncomfortable circumstances to produce the products you seek. Visit our Engineering Division and get briefed on future projects.

With a better understanding of the complex operations of this small, dedicated organization, we think you will continue to be defensive of the independence of your Fish Commission.

Ralph W. Abele,
Executive Director

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

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November, 1978

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FRONT COVER

Most of us need little convincing that fishing is fun anytime.
From the looks of most of our waterways this time of
year, however, it appears that many need a bit more convincing
that *now*, when the crowds and bugs are gone, is just
as appealing as ever. Our front cover depicts most any stream
in the Commonwealth in November — waiting for anglers!
Photo by the editor.

BACK COVER

Sam Hossler photographed a fishing companion doing his best at
sunset in a picturesque Presque Isle lagoon at Lake Erie.
There are salmon and a host of other gamefish available right now!

MONTHLY COLUMNS

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James F. Yoder, Editor

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CRAYFISH CONVERT —

I'd like to share some of my fishing experiences with all the anglers who fish the Susquehanna River and other rivers throughout the state.

After fishing for bass several years, mostly with lures, and after examining the stomach contents of the ones I kept, it finally dawned on me that, since all I found in them were crayfish, why not use them for bait. Well, after reading Don Kingery's "Bait Up" column in the July issue of the *Angler* where he explained about using crayfish for bait, I couldn't take it any more and had to give it a try. The results were fantastic! After three early morning fishing trips I caught and released over 20 bass, all legal and up to 16 inches. As a few more weeks went by, besides catching more bass, I caught catfish up to 21 inches and 8 carp all around 30 inches and each one weighing between 10-15 pounds.

Any angler who hasn't fished the river with live crayfish should start right now because, if not, he might miss out on some exciting fishing to be enjoyed on the Susquehanna and at many other places in Pennsylvania.

There are many things I learned from reading the *Pennsylvania Angler* and really appreciate the good articles it had. I hope to keep enjoying the future issues and learn more because nobody can ever know everything about fishing.

PAUL KRASOVIC
Steelton

COOL, MAN, COOL!

I was recently scuba diving in an old limestone quarry called the "Blue Hole" just outside of Williamsburg. As usual the fish there were very curious of our underwater existence and as a result were very easy to approach quite close.

On our second dive I decided to take my rod and reel underwater with me and try my luck. Needless to say, my diving buddy thought this was pure buffoonery, but soon it was clear that I'd have the last laugh. The first fish I approached (a 12" large-mouth in about 20 feet of water) at first attacked the splitshot on the line but soon

saw the dangling night crawler and ravenously attacked it. I set the hook and the underwater battle was on. It was very interesting to observe close-up how a fish reacts to the bait, strikes and fights. I had to come to the surface to land (?) unhook and release the fish (and also to observe my diving buddy's jaw drop) because it is very difficult to get hold of a fish underwater. The rest of the dive, I caught at least six other bass (all greater than 10 inches) and released all of them. Using this method I was able to concentrate on only the larger fish and I'm convinced I could have caught practically any fish in that lake.

On the way home I wondered though if this type of fishing was legal. I looked in the Fish Law Summary but as I suspected scuba fishing wasn't covered. I have a fishing license and am a certified scuba diver and also was using a rod and reel. The biggest hindrance I see in doing this (assuming it's legal) is that for many lakes swimming is prohibited and the underwater visibility may not be adequate.

I'd appreciate your comments on this subject.

BOB KERR
Monroeville

We've seen fishermen sitting in boats with feet dangling in the water alongside the boat; shore fishermen with their feet in the water; barefoot waders with jeans rolled up to the knees; waders in hipboots in water about that deep; waders with chest waders in water up to their armpits; waders in bathing suits . . . so what's wrong with fishing underwater? Illegal? Certainly not. Kooky, maybe, but not illegal. Underwater "fishing" becomes *illegal* only when it's done with spear guns and the like. Just remember to display your fishing license and watch out for trolls! Ed.

WHERE TO STAY?

I have been reading the *Angler* for over eleven years and I think it is great. Leave it as it is.

I love to fish the lakes of Pennsylvania. The only trouble is we do not own a trailer, being senior citizens . . . and then some. I know of only one lake where there are motels in sight of the lake (Wallenpaupack). Maybe one of our waterways patrolmen can tell us of some others. We would be glad to hear from them or anyone else.

JOHN STAMBERGER
3520 Chippendale Avenue
Philadelphia

"Leave it as it is"? OK, John, but we're trying to improve it with each issue . . . whether we're succeeding or not will be up to our readers.

We're going to offer you some information which we hope will be of benefit to all our readers as well. The Fish Commission's mandate is the management of the Commonwealth's fishery and its recreational boating resources. Although we like to see every one comfortably settled down along a waterway which will provide them with what they seek, we must hope for a great deal of personal initiative within the fishing and boating ranks. In short, we are not a travel agency, per se. However, help is available: Pennsylvania's Department of Commerce, Bureau of Travel Development Room 206, South Office Building, Harrisburg, Pa. 17120, has a wealth of information available for travelers. After you have decided *where* you want to go, write them. Your request for information should be for a *specific area* rather than "Where's a good place to go?" type query. Good luck! Ed.

COMPLAINT —

I am a new subscriber of your magazine and already, after three issues I can see you have a great magazine. But, I have one complaint — I think you place too much emphasis on trout fishing. Please even out your articles to bass panfish and even carp. I like trout fishing, but I'd rather fish for other species. Please do a story on bassin' on the Delaware.

HARRY MCMASTER
Philadelphia

BLUEGILLS —

I am enclosing a check for a 3-year subscription to the *Pennsylvania Angler*. I was given several copies in Florida last winter and enjoyed reading them. One in particular I was delighted with was the issue having the most colorful bluegill on the cover — only wish it had been a whole fish. We fish for them as they are so much fun to catch and, of course, very good to eat. We catch only what we can eat and release all the smaller ones to grow. Until a couple of years ago my husband didn't believe in fishing for panfish. He went to Canada. But now he is happy to fish here since he is unable to go camping.

MRS. AUGUST CORALL
Akron, Ohio

CABIN FEVER CURE —

Enclosed is my check for renewal of the *Pennsylvania Angler* for three more years. Again, I would like to thank you for a very fine fishing magazine. There were many cold and snowy winter days this past year that I dug out the back issues of the *Angler*.

and read through them again to get rid of the "cabin fever." Also, my thanks to the Pennsylvania Fish Commission for making our state a great place to fish. Thank you.

JOSEPH F. TERSAK
Pittsburgh

STRUBLE BLUES

I am writing to tell of the nice size gamefish awaiting the eager fisherman at Struble Lake. My father and I spend at least one day a week there. There are many picnic benches and a lot of room to bring the whole family. It was built by the Pennsylvania Fish Commission and is still patrolled by them today, keeping it clean and trouble-free. So far our family has caught five citation bluegills so you can see the fish are pretty big there. My biggest bluegill measured 10½ inches and weighed 2 pounds. It was also awarded a senior Angler's Award.

ROBERT BOBROWSKI
Havertown

OH! OH!

You do a great job with the money you receive, but I have one complaint: I have been subscribing to your magazine for some years now and I would like to know who in the H--- likes to fish for boney trout all year. I am an all-around fisherman but I especially enjoy bass fishing and in the years I have been with the *Angler* I can count the number of bass stories on ONE (1) HAND!

If this keeps up I am afraid that I will not be subscribing again when my subscription runs out and I doubt that I will be alone for all my buddies say the same thing. Thank you.

JEFFREY L. BEAR
York

There is little question that the *Angler* has had its share of trout fishing stories. But, if time permitted counting the "other-than-trout" stories, I believe we would come up with more bass stories than could be counted on one hand. The problem, if it might be called one, is that most trout fishermen appear to be writers (or vice versa — it comes out the same either way) and not nearly as many of our free-lance contributors are bass-oriented. We've tried — Heaven knows we've tried to solicit bass fishing accounts over the years. I wouldn't drop that subscription if I were you... we might just succeed in our attempt to balance our fishing stories and you'll miss them! Ed.

GRATEFUL

On July 4, I had lost my purse at the Nebraska Bridge Boating Area in Forest County. It contained a large sum of money. Thanks to a wonderful Patrolman, Mr. Couchenour, my purse and all contents were returned to me. My many thanks to the waterways patrolmen in Forest County Nebraska Bridge area.

MRS. IDA RUDICK
Jeannette

WHERE'BOOTS?

In the June, 1978 edition of the *Pennsylvania Angler* mention of the lure used for muskies on the Kinzua was "Swim-Whizz." Maybe you or one of your readers can tell me who manufacturers this lure and where they can be obtained. Thank you.

DONALD A. BUSS
R. D. 1, Box 80
Knoxville, Pa. 16928

It would seem that tackle shops would have such information, right? Anyone who might help Mr. Buss can write directly to him. Ed.

HAD A FINE TIME —

Thanks for a great summer to a group of great guys.

Last summer, my wife and I decided to tour Pennsylvania and see some of our own state for a change. We visited caverns, museums, old villages, railroads, lakes, parks, forests and a lot of other sights but I think the best sight and education of all were our visits to the Pennsylvania Fish Cultural Stations. I have fished and hunted all over Pennsylvania and enjoyed every minute of it. I also enjoy stocking with Jerry Crayton, Allegheny Country, Barry Mechling, Allegheny County, now in Beaver County (will see you soon, "Jolly Green Giant" quote G. T. Crayton per *Pennsylvania Angler* July, 1978). Also, Don Parrish, Beaver County, now in McKean County. Good luck, Don.

If you want to meet a great group of guys take my advice and visit our state hatcheries. You may not learn how to catch fish but you sure will find out how your license money is being used to your great fishing advantage.

It was a great summer thanks to the following men while on my visits to the Fish Cultural Stations: "Joe" at Corry; "Jerry," Union City; "Al" at Fairview; "Roger," Reynoldsdale. "Paul" at Benner Spring; "Francis" and "Dean" at Pleasant Gap. You're a great bunch of guys and I

hope you continue with your hospitality and friendliness to all the visitors as you did with my wife and me during the past summer. Hope to see all of you again sometime. Good luck, good health and keep those fish growing for everyone.

Sincerely a good friend,
BILL RAYMER
Ambridge

P.S. You may print all or part of this letter in the *Angler*. If not, please be assured I had a great time and am looking forward to visiting these and other hatcheries in the future.

LIKED IT . . .

Tom Duran, Staff Artist, "Accolades" for your August cover. Keep up the good work.

JOHN J. GOODLEAF
Wautagh, N. Y.

MOVING?

Send us both your
old and new addresses
with both zipcodes.

DOWNHILL —

I am a recent subscriber for your magazine and I am more than satisfied with it. After reading Mr. Graff's answer to Mr. Buffington I am in total agreement with Mr. Graff.

I was born in Pennsylvania and fished and hunted there for over forty years. I helped stock fish back in the 1930's and took an active part in fish and game until I moved to New York state. My wife and I fish a lot and we bought a nonresident license and went to the Kettle Creek and Young Womans Creek area for two different weeks in June. We found the fishing excellent. We caught some good-sized stock trout but a good number of the so-called wild trout. I think the Fish Commission's doing a good job and also the Sportsmen's Clubs. When I came to New York, the fishing was excellent also.

We fished the Adirondacks for stream trout and Finger Lakes for lake trout. As you know, in this state the money from licenses goes into a general fund. Now they have closed most of the hatcheries and almost quit stocking entirely and in less than two years we can see the fishing going downhill. I understand the politicians are trying to do the same thing with license money in Pennsylvania. You sportsmen better not let this happen.

JAMES O. SMITH
Erin, New York



For the angler who has everything (or almost!) a wok might be the end of the search for something new!

MEALS from the CREEL

by Arthur J. Michaels

How to Make "WOK" Music

Crackle! Fsssss! It's thousands of years old . . . originating in China, it's a feat of engineering genius. It provides an easy way to cook many delicious fish recipes with only a small cleanup job afterward.

These are the sounds of high-heat, wok cookery, and considering its advantages, you, too, ought to make beautiful music like this in your kitchen. You'll need a tempting recipe, the right ingredients, a few utensils,

and a wok. If you've never tried wok cookery before, here's what you need to know.

If you could peek into the kitchen of your favorite Chinese restaurant, you'd probably see several woks of different sizes hanging on the wall. This assortment of woks increases the chef's versatility, but you don't need several woks. In selecting one wok, consider the largest number of people for which you might prepare a meal. Woks are available in sizes from small, twelve-inch ones to very large, twenty-four inchers. You can cook a small meal in a large wok, but you can't cook a big meal in a small wok, so select one that's larger than you think you'll really need. A fourteen-inch wok is perfect for stir-frying meals for two or three, but you'll need at least a sixteen-inch wok to cook for four or six people.

Watch out when you buy! An authentic wok is made of cast iron with a round bottom. Steer clear of flat-

bottomed, aluminum or stainless steel woks if authenticity is part of your game.

A fourteen-inch wok will cost about \$16. Larger woks cost more. You can buy a wok by itself, or in a kit containing utensils — some you'll need, some you won't need, and some you'll want to replace. Look for woks and wok kits in the housewares department of large department stores or restaurant supply houses.

A wok kit usually contains the wok, a cover, a deep-frying skimmer, a serving ladle, a wood steaming rack, a cleaning brush, a stir-fry spatula, cooking chopsticks, a ring holder to place over the burner on an electric or gas range, and a booklet of recipes. Most wok kits also come with easy-to-follow instructions and explanations for using the utensils, but you ought to know that you can Americanize your wok cookery easily enough.

The spatula, for instance, is a cast iron hulk about three inches wide. You

could substitute any wide spatula if you wish. The wooden steaming rack, too, is less efficient than using a round cake rack. Depending on the size of your wok, the cake rack should rest in the wok so that an inch of water lies about a half-inch below the rack. An eight-inch diameter, round cake rack fits perfectly in a fourteen-inch diameter wok.

This wok cookery trick — using a cake rack of the proper size in place of the wooden steaming rack — is important because the wok is perfect for steaming fish, in addition to its use in stir-frying.

Along with the wooden steam rack and spatula, you may wish to modify your use of the ring holder. If you have a gas range and your round-bottomed wok rests steadily on the utensil support, you don't have to use the ring holder. Stir-frying, though, can get hectic, and if your wok isn't supported on the range solidly, you may spill your wok music all over the range and floor. Regardless of the range, electric or gas, many wok experts advise your using the ring holder, anyway. For use on a gas range, remove the utensil support and place the ring holder over the burner with its wider rim down. On an electric range, place the ring holder over the element with its smaller rim down. And on an electric range, wok cookery is best when you use the largest burner.

If your new wok is made of cast iron, you have to condition it before you use it. This removes the protective oil coating on the new wok and keeps food from sticking, even in constant, day-to-day use.

First, wash the new wok in hot water with soap and a plastic scrubber. Then prop it up on the range and pour a little cooking oil in. With a paper towel, wipe the oil around the wok bowl so that the entire inside has a thin coat. Now turn on the heat for about a minute and a half, and then let the wok cool for a few minutes. Pour out any excess oil and wipe the inside again with clean paper towels. You should leave a thin film of oil on the wok.

Besides conditioning your wok, earning a cleaning procedure is vital to the long life of your wok. Wok experts, though, disagree on the best method. One easy method calls for you to pour hot water in the wok after use, and scrub it with a plastic sponge.

Then dry the wok by putting it back on the burner and heating it again briefly. With this method, you never clean the wok with a metal sponge or a metal scouring pad, and you never use soap, either.

But with a lot of use, a cast iron wok will eventually turn black (a normal occurrence which does not adversely affect your wok cookery), and sometimes a wok will rust. You have to scour a rusty wok. Put it in the sink and fill it with hot water. Break out your metal scouring pad and soap and scrub that rust away.

There are two problems with this cleaning method. First, you have to dry the wok very thoroughly or your rust problem will get worse. And second, metal cleaning pads and soap will remove the nonstick action of the wok. So, if you scrub your wok with soap and a metal scouring pad after each use, you'll have to grin and bear the sticking problem.

Now, with a conditioned wok poised on your range, trim your kitchen for action so that your wok cookery proceeds smoothly. Stir-frying is high-heat cookery. This means that food cooks *fast*. You can't stir-fry in the midst of chaos and come up with beautiful wok music. Whatever recipe you're preparing, have all the ingredients cut and ready for the wok before you turn on the heat and line up the ingredients on a counter in the order they'll be put in the wok. In this way, all the ingredients are ready for the wok, and you can stir-fry in a smooth and uninterrupted system, adding ingredients to the wok one right after the other.

Most stir-fry recipes call for your slicing, dicing, or cubing the ingredients. This is important. The advantage of stir-frying is that the fish and vegetables cook quickly, retaining their tender, sweet flavors. When you're stir-frying correctly, fish will cook up tender, juicy, and flavorful, and vegetables will come out tasty and crunchy. As the small amount of oil used in stir-frying coats each piece of fish and vegetable, it locks in the juices and nutritional elements, too. You end up with a delicious, highly flavorful and healthy fish meal!

Here's a secret for cutting vegetables: The trick to cutting vegetables for wok cookery is to expose the greatest amount of surface area of the vegetable. This releases the most

flavor of a vegetable when the meal is served. Take carrots, for example. Don't just slice a carrot into a pile of orange checkers. With both ends of the carrot cut off, try slicing at a forty-five degree angle, both down into the carrot and across its surface, rolling the carrot with the knife as you slice. You'll get strange looking carrot pieces, but more of the carrot's surface will be exposed in stir-frying, and it will come out more flavorful. Cut other vegetables at least on a slant — not straight up and down on the cutting board, and slice fish in chunks or in thin strips.

Here is the basic stir-fry technique for just about any recipe you'll prepare: First, heat the wok for about ten seconds over a high flame. Next, add oil (the amount depends on the recipe). Wait until the oil just begins to bubble before you add any ingredients. Put each ingredient in the bottom of the wok — that's the hottest place. As you add ingredients to the bottom of the wok, push the cooked food up the sides of the wok. When all the ingredients have had their time in the bottom of the wok, keep stirring so that nothing burns and oil coats everything. The whole process happens lightning-fast. Rarely will you cook anything in your wok for more than ten minutes.

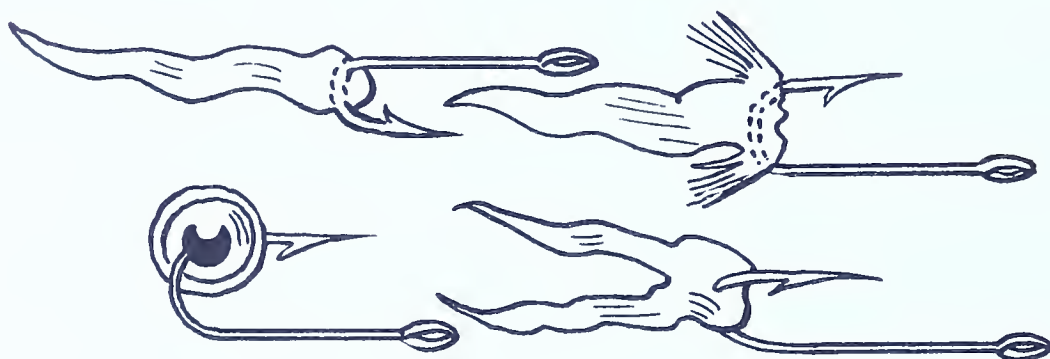
In addition to stir-frying, your wok is perfect for steaming fish. With ease you can steam whole fish like trout and panfish, fish steaks, or fillets. Use either the round cake rack or the wooden steaming rack. Pour an inch of water in the wok, place the fish on the rack, cover the wok, and turn the heat on.

Watch that steaming time! For whole trout and panfish, four minutes of steaming is plenty. Steam thicker steaks and fillets eight minutes, or ten minutes if you've just pulled them from the refrigerator.

Another advantage of steaming fish in a wok is the ease with which you can add herbs, spices, and flavorings. It's a snap to lift the wok lid and add your favorite garnishes to the steaming fish. For extra flavor, try sprinkling your steaming fish with lemon juice, pieces of onion, salt and pepper.

If you're thinking of buying a wok, there's one final consideration: with the holidays just around the corner, a wok makes a perfect gift for both the experienced and the novice fish cook.

“Digging,” “Picking,” or “Netting” your bait for the next fishing trip might not be necessary. Many of these somewhat different baits might already be in your pantry — if not, try your bait dealer.



Bait Up

by Don Kingery

illustrated by
Ray Piccolin

STRIP & CUT BAITS

Strip baits are generally lengths of skin and flesh cut from the belly or back of fish. Sharp, thin-bladed knives work best for carving strips. If you want dark strips, cut them from the back; if you want lighter strips, cut them from the belly. The strip should either have a thick head and taper down to a thin tail(s), or be spindle-shaped, having a double taper. Today you can buy pork rind precut and packed in oil or brine. It comes in every color imaginable, but green and white are the favorites. There is also an assortment of soft, limber plastic strips in various colors on the market. Strip baits are generally hooked once

through the head, or they are put on a two-hook harness with one in the head and one in the tail.

Strip baits are generally considered surface lures. Fish them fast to keep them on top of the water. They should have a rapid fluttering action when trolled or retrieved. If the action isn't fast enough, take a knife and trim down the tail or increase the speed of your retrieve.

To fish strips on the bottom, attach a sinker to the line just ahead of the hook and use a slow jigging retrieve. For submerged strips, the sinker should be attached to a dropper ahead of the strip. Care must be exercised when trolling submerged strips. The strip itself must be perfectly balanced to prevent spinning and the trolling speed must be slow enough to keep the strip from planing to the surface.

Strip baits are often used in conjunction with artificial lures, one strip generally being attached to the terminal hook. A small strip attached to the leader ahead of a trolled worm or minnow will attract more fish. When fishing in flowing water, from a dock or bridge, lower the bait into the water and allow it to drift with the

current, occasionally raising the rod tip to keep from getting snagged. Keep the line taut as you will often get strikes at this time. After the bait has drifted as far as you want, retrieve it by jigging with short jerks and occasional pauses.

Cut baits differ from strip baits in that they are more of a bait and less of a lure. Cut baits have more meat and less action than strips. Take a ten- to twelve-inch fish, fillet it and then cut the fillet into bait-size chunks. Be sure to leave the skin on the fillet as this will help hold the bait together. Cut baits are generally still-fished or slowly drifted just off the bottom. Keep the excess frozen or use it for chum.

For variety, place your cut or strip baits in a jar and add just enough water to cover them. Next add enough food coloring to thoroughly dye the water the color of your choice. Allow this mixture to sit for at least six hours, drain off the water, and you have colored bait.

SKITTERING

For skittering you need three things: bait, a long cane pole, and a piece of strong line about the same length as the pole. The bait can be either live or artificial: frogs, tadpoles, salamanders, minnows, pork rind, strip baits, or pieces of cloth — all are used successfully. The pole can vary from twelve to twenty feet, but should be strong enough to stop the rushes of a really big fish. The long pole also gives accuracy in casting and allows you to pick up the bait before it gets caught in the pads. The line should be capable of taking unusual strain; fifty-pound-test is considered minimal (Remember, there's no drag or reel used in skittering.).

Skittering is an excellent method of fishing among large areas of lily pads and vegetation with small patches of open water. The bait is dropped into open spots in the weed beds and jigged, or drawn along the top of the water toward the boat until it becomes necessary to cast again. The bait should appear to swim and play across the surface. In exceptionally good looking areas, work it in circles or figure eights, occasionally pulling it onto a pad or log to “rest.”

Quiet is vital because of the proximity of the fisherman and the fish. Fish

are not disturbed by boats or talking, but the splash of oars or the scraping of a tackle box or boots in a boat will alarm them.

When you hook a really big fish, and you don't think the pole will stand the strain, throw the pole into the water and let the fish tire itself out fighting the pole. Bamboo, with all its air pockets, acts like a natural bobber and won't sink. When the fish is worn out, retrieve the pole and pull it in. The fish will often snag up and pull free, but losing a fish is better than breaking a pole and then losing a fish any day.

BAIT FOR SCAVENGERS

This section is designed to serve as a *general* guide to common baits for scavenging fish such as carp, catfish, suckers and chubs. To go into all of them in detail would fill another book.

DOUGHBALLS — There are almost as many recipes for doughballs as there are anglers who fish with them. The four basic ingredients are flour, cornmeal, sugar and water. These are combined in various proportions and mixed to form a tough dough. This dough can be used raw, or made into small balls and dropped in boiling water for ten to fifteen minutes until it reaches a dumpling-like consistency. Unused dough should be kept in a refrigerator or freezer. A little bit of soda mixed in with the dough will keep it from souring.

Many anglers fish with plain dough; others prefer to flavor it. This is easily done by mixing commercial flavor extracts with the dough. Vanilla, licorice (anise), orange, lemon, maple, almond, peppermint, and wintergreen are among the more common. Ground meat and crushed insects are two other ingredients often mixed with the dough. Catfish are supposed to have a real weakness for anise and human saliva. So, if all else fails, spit on the dough before you cast it out!

Always dry the hook before putting on a fresh dough ball — this helps keep the dough from slipping off the hook. Another trick is to knead absorbent cotton into the dough to help hold it together.

CHEESE — Cheese is another favorite bait for carp, catfish, suckers and hatchery-reared trout. All types are used: hard cheeses are cut into small

cubes and hooked like salmon eggs; softer cheeses, like Velveeta, stay on the hook better if first cut into cubes or made into balls and then frozen (Carry them in a thermos bottle). Small gobs of cottage cheese are wrapped in small squares of cloth and hooked — cloth and all. You can purchase flavored cheese baits in tackle stores and bait shops; some types are even designed to float.

STINK BAITS — All catfish anglers swear by stink baits. These are concoctions of various materials that are allowed to partially rot and then are used as bait. They can be made of meat, cheese, fish, eggs, or anything else that rots. Clams are an all-time favorite. Take the bait, cut it into bait-size chunks, and bury it in a jar with a loose lid for five to seven days. Use the chunks themselves or tie a piece of sponge to your hook and dip it in the juice. Chum the area you intend to fish for a day or two beforehand and then fish on the bottom.

OTHER SCAVENGER BAITS — Almost any type of vegetable or fruit will take carp. Corn is an old favorite, but peas, lima beans and green beans work equally well. Use them raw or cooked. Half-boiled potatoes are excellent bait and so is bread. To score consistently on scavengers, chum your fishing hole ahead of time. Choose an area in quiet water relatively free of weeds; punch several holes in a can of creamed corn and lower it into the water. Tic it to a tree as the carp will batter it around and knock it out of the hole if you don't. (Editor's note: take the can home with you when finished — otherwise you're a LITTERBUG) Another good chum is meat scraps and bones placed in the fishing hole for two or three days. Raw or boiled potatoes will also work; so will almost any type of table scraps.

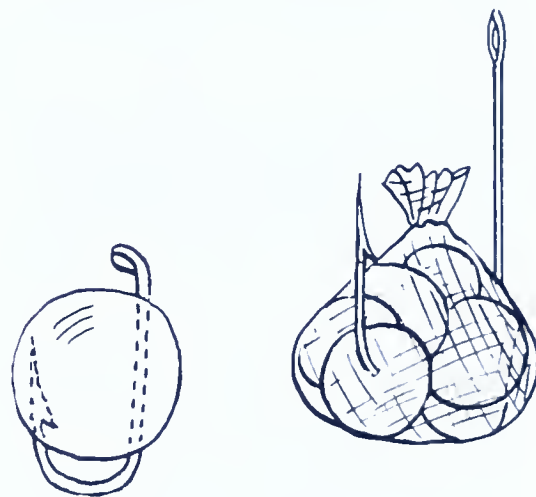
Don't be afraid to experiment. Scavengers, like catfish, carp and suckers, will take almost anything: liver, hot dogs, spleen, marshmallows, and even small gobs of algae.

FISH EGGS

Salmon eggs are an old favorite for trout, although nowadays the "Real McCoy" are often difficult to find. Today most salmon eggs are gelatin imitations, colored to contrast with the bottom, and artificially flavored. Jars of these "salmon eggs" are available in

most tackle shops and bait stores.

Individual salmon eggs should be fished on small hooks, or on special salmon egg hooks. Push the point through the skin of the egg and push the egg up the shank. Now turn the egg and slide it back down the shank and onto the point. When this is properly done, the egg nestles in the bend of the hook and will not come off even when cast hard. Clusters of salmon eggs should be wrapped in small squares of fine net (hair net or nylon tulle), and tied at the top with thread. Simply bury the hook in the middle. Salmon eggs are customarily still-fished or fished at a dead drift.



Egg sacs, also known as egg pouches, are the sacs of ripened eggs taken from fish caught during or just before spawning. Most fish, especially panfish, spawn in the spring and this is the best time to fish for them. When cleaning your catch, take out the egg sac intact and fish it on a single or small treble hook. Still-fish them on the bottom or drift them through deep holes. For fish with larger egg sacs, such as carp and salmon, wrap clusters of the eggs and fish with them. To preserve large quantities of fresh eggs, cut the sacs lengthwise several times, put them in a bowl and mix powdered borax with them. Mix them thoroughly and make sure each egg gets a light coating of borax. Next place the bowl of eggs in the refrigerator for twenty-four hours. After this time, cut or wrap them in bait size clusters and freeze them. They will keep indefinitely. A variation of this method is to use a mixture of half sugar and half borax instead of pure borax. If you want colored eggs add a drop or two of liquid food coloring during the mixing stage.

Fishing the Susquehanna's West Branch

by Richard F. Williamson

Two generations ago, fishermen along the West Branch of the Susquehanna River were disgusted, some of them literally sick and all of them angry.

The West Branch was an open sewer. Communities along the river discharged their sewers into the stream; industries dumped waste; from time to time, huge slugs of acid water from soft coal mines in the western part of the state flowed downstream, killing every living thing. Boating and swimming were discouraged by health officials. Fish kills were devastating, with great masses of gamefish, panfish, minnows and other aquatic life blown into stinking windrows along the shores. At the mouths of large creeks emptying into the river were fish by the thousands, desperately seeking the fresh water of the tributaries.

One night last June I spent a couple of hours along the river just below the wooden dam at the foot of Hepburn Street, in Williamsport. The situation had changed dramatically.

Fifteen fishermen were in position along the shore at the base of the high dike that protects the city from floods. Some were using worms; some casting lures.

While I watched, five or six walleyes and several bass, all in the range of two to three pounds, were hooked and netted. The youngsters were hauling in huge rock bass and bluegills. One teenager gave whoops of delight when he netted a brown trout that, once safely on the stringer,



Bass and other gamefish abound in the West Branch of the Susquehanna.

measured 18 inches in length and was fat as butter and beautifully colored. It had taken a lively night crawler.

From shore we could see huge carp in an eddy at the side of the dam spillway, and along the rocky shore, schools of minnows were nervously darting.

There were fishermen in the area when I left at dusk and as I climbed the steep river side of the dike I could hear a burst of excited conversation that was a sure signal that another good fish had been caught.

There, while I watched, was visual proof that the West Branch of the Susquehanna had come back... it now contains an abundance of fish.

A grizzled old-timer who sat on the

rocks beside me gave me a list, all based on catches he has made in the river within sight and sound of Williamsport. He began by showing me pictures of three fish he caught last year. Two were walleyes of four or five pounds. The third was a brown trout that measured 19 inches. He said that he has also caught smallmouth bass and chain pickerel, and he has seen northern pike and muskies taken from the West Branch, although he has taken none of these species himself.

He has found the river teeming with brown bullheads, perch, plate-sized crappies, rock bass, bluegills, suckers and carp, and he said he has seen channel catfish of six or eight pounds hooked and landed.

"There are huge schools of minnows in this river and the fish get fat on them," he said.

Al Henning, a friend who has found the river fishing so good that he doesn't give much thought to catching trout in other streams, was with me at the river side. I have seen some of the fat walleyes he has taken from the river.

Al is a lure fisherman — at his own risk. He told me of one night when he got a tremendous strike on a jointed imitation minnow he was casting on 20-pound-test monofilament line. Taking advantage of the heavy current just below the dam, the fish took off at high speed for the opposite shore. Al just hung on and prayed . . . until the fish snapped his line. He never saw it

West Branch, the result of discharge of acid mine water into the stream in a massive amount. The case went to the state supreme court and even to the federal courts, and in the end the mining company was not only compelled to make use of water treatment facilities that removed the threat to the West Branch, but also it was compelled to pay the state several million dollars in compensation."

Mr. Alters said that under state environmental protection laws, 21 municipal and industrial treatment facilities are now in operation along the West Branch between Lock Haven and Sunbury. They are monitored constantly to assure that the river continues under legal protection.

"The system is not perfect," Mr.

mission.

"Fishing is best when the river reaches a stage of about eight feet," he said. "That seems to put the fish in motion in search of food.

"Brown trout are being taken from the river in spite of the fact that they were never stocked there. That's because brown trout are travelers. They move from the creeks into the river almost constantly, especially during the spawning period, for the West Branch has many areas providing gravel for trout spawning beds. The mouths of tributary creeks are especially good."

Bob is a devotee of night fishing for trout. He has found that large wet flies and nymphs, particularly with patterns that have been developed for trout fishing on western rivers, are good producers on the West Branch. He has found, also, that streamers are effective. But he said he fishes the West Branch for bass and walleyes, not for trout, and considers an occasional brownie as a kind of angling bonus.

Finally, I consulted James H. Lauer, of Jersey Shore, Waterways Patrolman for Lycoming County. "Fantastic" was the word he used to describe the condition of the West Branch and the fishing opportunities it offers.

Over the last five years, he said, the river has been stocked with tiger muskies, walleyes and channel catfish. Other species, including panfish, have migrated into the river from its tributaries and from pond-like guts running off the river in several locations. In a similar manner, the bass population has increased steadily.

Fish caught in the river are heavy and in excellent condition, Jim said, and that means that natural food supplies are excellent in the stream. Many areas are teeming with minnows. Crayfish, which are a favorite food of smallmouth bass, are slowly but steadily increasing in numbers.

Jim goes beyond official records in his assessment of the West Branch. He has spent hours floating the area in Lycoming County, observing river conditions, and he has seen the catches of hundreds of anglers, so he speaks with authority.

To analyze the West Branch we'll consider the stretch of water from Lock Haven, in Clinton County, to Sunbury, in Northumberland County,



A boat is great, no doubt about it, but shore fishing is popular too.

but he figures it was a very large pike or a muskie.

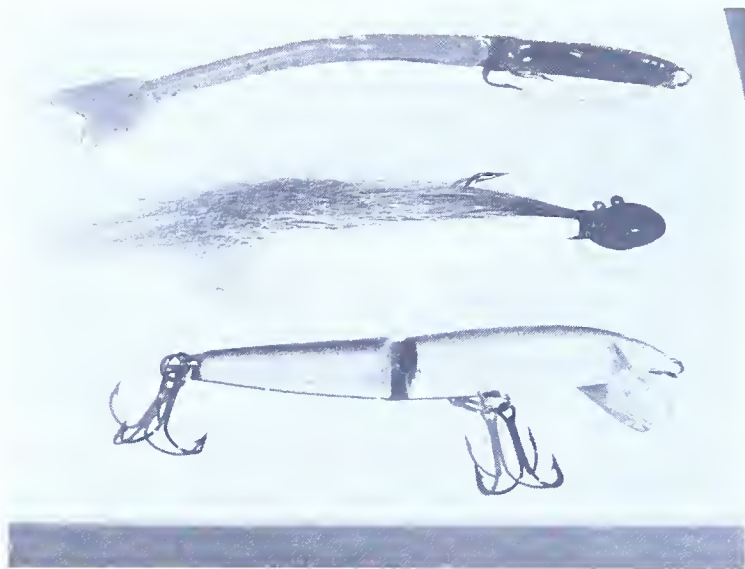
"What transformed the West Branch?" I asked myself and, for the purposes of this article, some authorities on the subject.

First I put the question to Donald L. Alters, field supervisor of the operations section of the Department of Environmental Resources in an all-county area.

"The big breakthrough came about ten years ago," he told me. "The Department of Environmental Resources went to court against the Barnes and Tucker mine operation in the Clearfield area. DER charged the company with responsibility for the worst fish kill in the history of the

Alters said. "There are some trouble spots that are getting attention. But, on the whole, municipalities and private industries have worked hard to comply with DER standards. DER keeps close watch on the river and on the treatment facilities, for we are determined that the West Branch will remain a clean, safe stream for outdoor recreation of all kinds."

Then I had a long talk with Robert E. McCullough, Jr., of Williamsport, who is a dedicated trout fisherman but who now finds the warmwater fishes of the West Branch competing with trout for his attention. Besides, Bob is a national director of Trout Unlimited and is environmental coordinator for the Lycoming County Planning Com-



Plastic worms, jigs dressed with bucktails, and plugs shaped like minnows are all very productive lures.

West Branch fishermen find surface lures, like propeller tipped minnow plugs and floating darters, and spinners all good.



where it joins the North Branch to form the main Susquehanna that flows southward into Chesapeake Bay. A dam spans the river in Williamsport and another in Lock Haven. Water churning over these structures in spring and as a result of heavy summer rainfalls has gouged out deep holes and created areas of swirling, angry currents.

Scattered along the stretch are midstream islands, some rather large, with rocky shorelines. There are sandy shoals and some very deep holes. And, down in the depths, visible only when the water is low and clear, are monuments to the logging industry that once boomed in this area. Water-rotted logs and stone pilings that once formed booms to hold rafts of logs floated down the river to Williamsport remain as cover for fish. In quieter stretches along the shores are weed beds.

Bridges span the river at numerous points. There is one at Lock Haven, one at Jersey Shore, and one on Route

405 between Muncy and Montgomery, in Lycoming County.

The Williamsport area has four bridges and the remains of a fifth. At Linden, west of the city, is a railroad bridge. In the city itself are the Arch Street, Maynard Street, and Market Street bridges. In the eastern end of the city are the remains of an abandoned railroad bridge. The stone pilings of these structures create currents and pools that are excellent fishing spots.

Constant sources of fresh water pouring into the river are five large creeks: Bald Eagle Creek, in Clinton County, Pine Creek, Lycoming Creek, Loyalsock Creek and Muncy Creek, in Lycoming County. Besides being reservoirs of fresh water, these creeks are "homes" for gamefish that have a habit of working downstream and into the river and as "hatcheries" for gamefish that by instinct migrate into smaller tributary streams to spawn. Some of the best fishing spots along the river are at the mouths of these

tributary streams, particularly Pine and Loyalsock Creeks.

The West Branch attracts fishermen who use bait as well as those who cast lures. Night crawlers and minnows are the favorite live baits.

Lure fishermen like minnow-shaped plugs, particularly jointed models, spoons and spinners of a variety of colors, shapes and sizes, and jigs. Surface lures work well in the evenings. All of these are used with casting or spinning tackle. Devotees of the fly rod use cork, plastic or deer hair poppers on the surface and big streamers to get down into the water.

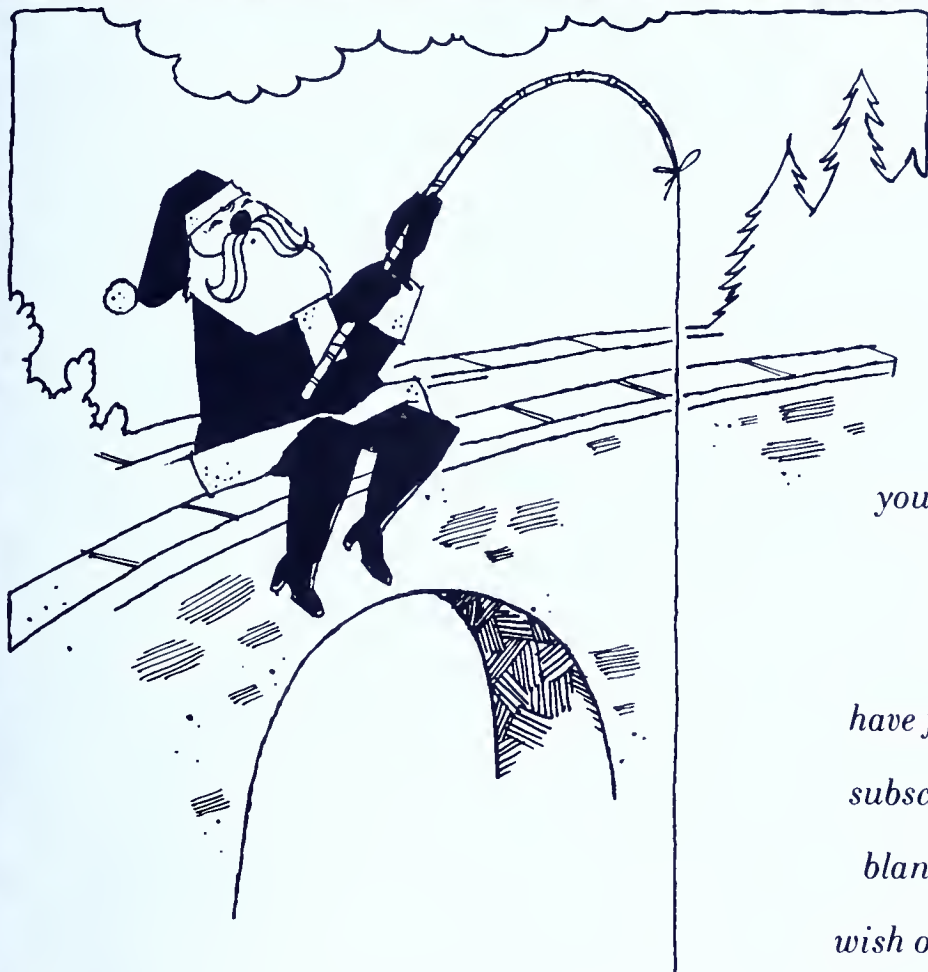
Another friend of mine, Larry Kahle, being the inventive type, designed a large streamer to imitate a perch. He caught bass all summer from a bed of submerged weeds that he located some distance offshore in the river just below the town of Muncy. He fished the streamer with fast, hard jerks just under the surface of the water.

A few West Branch anglers have boats equipped with sophisticated electronic fishing gear, but most anglers use rowboats, canoes, or small boats with outboard motors of modest power. There is a small state park, appropriately named "Susquehanna," with a boat launching ramp in the western end of Williamsport. Boats put into the water here, however, cannot go downstream past the Hepburn Street Dam.

More anglers fish from shore than from boats. All along the river the water is easy to reach from the banks on both sides and even the mouths of the tributary creeks can be fished without use of a boat.

It should be noted that the West Branch is popular not only with fishermen, but also with boaters and swimmers. A veritable fleet of boats of all kinds, including canoes and sailing boats, roam the water above the Hepburn Street Dam all during the season, sometimes literally creating traffic jams. There are numerous swimming holes along the course of the river and these are also heavily used.

So, actually, all lovers of outdoor sports and recreation based on water rejoice at the comeback of the West Branch, now flowing clean and alive in contrast to the deadly pollution its waters carried a couple of generations ago.



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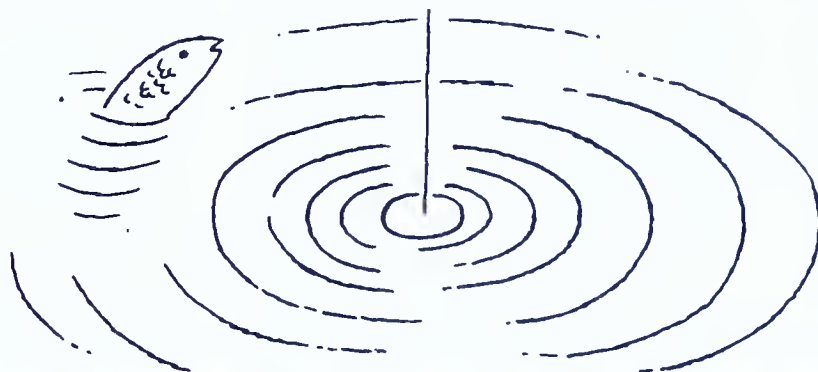
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"Quality angling" means something different to each angler; to some, merely being alone brings satisfaction. Unfortunately, being alone is not always easy among more than a million others with similar preferences.

A Message to "Quality Anglers"

by Delano R. Graff, Chief
Division of Fisheries

"Quality angling" and "quality fishing" are terms that seem to be growing in popularity among Pennsylvania anglers. It is certain as death and taxes that, sooner or later, a fisheries biologist in Pennsylvania will be told, "It's too bad Pennsylvania is only a put-and-take state. You guys should manage for quality fishing." or "My club doesn't agree with the Commission's programs, we're quality anglers!" There is really no appro-

priate response to such comments. Answers could be given ranging from "Is that a fact?" to a commonly used phrase which combines an opinion of the intelligence of that particular "quality angler" with an inference of possible canine parentage. The problem is not that professional biologists are unable or unwilling to discuss trout management programs; it is, rather, that one can never be sure what an individual means by "quali-

ty." "Quality" has no universal definition when applied to angling — it is highly individual, a subjective definition influenced by age, intellect, personal background and the angling magazine or book most recently read.

Historically, it has been difficult to arrive at a satisfactory definition of "quality" as it applies to trout management. Fishery biologists tend to be objective and cautious in making

premature claims about what data may or may not "prove." Some of the best known advocates of "quality angling" tend to be quite the opposite, depending on emotionalism, personal biases and prejudices, or sweeping generalizations, to make their point. Some of these gentlemen are guilty of creating facts out of "what I say it is" and ignoring "what it actually is" when discussing "quality angling" and certain trout streams. For many years this extreme divergence in views prevented any constructive exchange between "quality angling" advocates and fishery managers.

Slowly but surely attitudes are changing. Admittedly, the books, articles and banquet speeches of some well known "quality anglers" are still viewed with uncritical devotion by many who style themselves "quality anglers"; however, more and more there is a growing realization that much of what is espoused by such writers or speakers is not being welcomed by the masses as a new gospel in angling. It is also abundantly clear that there is — even among "quality anglers" — no general agreement on what "quality" means. To some it means fly-fishing-only but it's OK to fish for hatchery trout and it's OK to kill fish; to others it means fly-fishing-only, catch-and-release (no killing of fish) and hatchery trout are OK; to others it means flies only, catch-and-release and only for wild trout; to others it may mean no lure restrictions but a pristine wooded setting and "native brookies." The list of possible perceptions of a "quality" fishing experience goes on and on. It is really difficult to manage for everyone's perception of "quality."

There are some aspects of angler interest in "quality angling" which I find refreshing. I welcome the growing appreciation of the contribution wild trout make to Pennsylvania's fishery and it's great to know that there are many anglers who fish for more sophisticated reasons than to have a creel full of dead fish. It is, personally, rewarding to work with anglers who fish for trout because they enjoy the wide spectrum of associated values more than having a few fried fish for breakfast. There are other aspects of the interest in "quality angling" which make me weary. I've lost count of how many times I've had to say such things as:

"Yes, I know about Whitlock-Vibert boxes. No, they won't help your favorite stream become better wild trout water."

"No, we do not stock 20-inch fish in our fish-for-fun areas."

"No, the extended season is not going to destroy all the big spawners."

"Yes, I know what kamloops are; they're a rainbow trout which is no better or worse than any other rainbow trout. No, they're not part of our management plan, nor should they be."

"Believe it or not, it is not a foregone conclusion that stocking will destroy wild trout populations. Yes, I know what was found in Montana. Do you know what we've found in Pennsylvania?"

"You must be joking, fall stocked fingerlings in a wild trout stream?"

"Yes, I read Lee Wulff's article on Yellowstone. Why, do you have a cutthroat trout population in mind?"

By now some readers have formed the opinion that I don't fish for trout, or if I do, I'm an insensitive lout who can't appreciate a good day on a trout stream. Wrong! My personal preferences in angling run strongly to the things that many anglers associate with "quality angling" — dry flies, split bamboo fly rods, a vest packed with far more flies, reels, assorted odds and ends than are necessary or practical . . . and an assortment of stupid looking hats! However, *what I prefer* as an angling experience is just that, *a personal preference*, not a definition of quality. Also, I have enough knowledge of trout and the many factors that control trout populations to know that many of the "truths" of "quality angling" are quite untrue. (A trout killed by a fly fisher is no more or less noble, or dead, than one taken on whole kernel corn or a marshmallow.)

Despite confusion as to what constitutes "quality fishing," there is no doubt that "quality" is important to a number of anglers and merits consideration as a fishery management objective. Those of us who pass judgement of fishery management policies must bear the responsibility for the quality of an angler's recreation; the course we choose will largely determine what fishing opportunities exist. There seems to be no best, universally satisfactory, approach to trout man-

agement. Therefore, we should always remember that the most important product of trout management is the value of the experience to the individual angler. Programs or policies which cater to one distinct element of the angling public can be quite unacceptable to another. That is, one fellow prefers fly-fishing-only and wild trout, another wants to use corn or cheese, worms, or salmon eggs and have a chance to catch his limit of hatchery trout. For whom do we manage? We had better manage for both or a lot of biologists will be out on the streets selling taffy apples or seeking employment as free-lance shepherds.

The wisest and best approach is to develop a comprehensive program of trout management which will provide satisfactory angling for a variety of anglers with differing preferences. This is not easily accomplished. Often the selection of a water area for a special management program as a consideration of "quality" creates strong local opposition. People will offer quite emotional resistance to the changing of a management program on a stream even though they have never experienced the proposed "new" management and may actually have little or no knowledge of the facts of the case. This is particularly true in situations where attempts are made to stop stocking in a stream supporting an exceptionally good wild trout population. Could it be that some people aren't interested in a "quality" fishing experience? (My kids would answer that by asking, "Do bears live in the woods?")

The "quality anglers" don't help their case. One persisting conflict inherent in consideration of "quality" in trout management is that between stocked trout enthusiasts and wild trout anglers. There is an attitude, frequently expressed by some apparently sincere people, that the planting of catchable size hatchery trout is not a legitimate function of fishery managers. I find that attitude incredibly naive. The planting of catchable size trout is a credible, often essential, aspect of fishery management. Despite what we hear from some purists, hatchery trout are not fundamentally bad. Actually, fishing for hatchery trout can be quite pleasant — both aesthetically and recreationally.

It may come as quite a shock to some "quality anglers" who stalk

along the banks of the fish-for-fun projects on the Little Lehigh, the North Fork of Redbank, Driftwood Branch, or even the famed Fisherman's Paradise (to name but a few) splendidly arrayed with all the "right" gear and attire as if hoping to be photographed for *Fly Fisherman* or *Gray's Sporting Journal* to know that many of those supercritical, highly selective trout came from a hatchery. Despite the fact that they drive past superb wild trout populations to fish for stocked trout in a "quality" project, many folks who style themselves "quality anglers" can be quite self-righteous about not fishing for "finless, witless hatchery trash" and not associating with "worm dunkers and meat hogs." This condescending attitude doesn't sell the "quality" crowd to other trout anglers; and, frankly, it's not too endearing to fishery biologists either.

"Quality anglers" (that is, those who *think* they are "quality anglers") have a lot of misconceptions about trout management, are often woefully ill-informed about the biology of trout, and frequently are a source of irritation to the fishery manager. Despite all this, they do have a valid point. There is a need for emphasizing the "quality" aspects of trout fishing in Pennsylvania. Anyone who has been on certain of our trout streams during an inseason stocking will agree that what happens after a heavy planting of hatchery trout can be distressing. It is quite evident that management, through well-publicized stocking of hatchery trout, is producing an angling experience that is, to many anglers, distasteful. Trout stocking will, and must, always be an important part of Pennsylvania's trout program. The recreational demand for trout fishing is high and merits a reasonable and balanced program to meet recreational needs. It is apparent that a "reasonable" response to the demands for hatchery trout has been achieved. We now find that a segment of the angling public which has been primarily interested in harvest and secondarily, if at all, concerned about aesthetic or "quality" aspects of trout fishing has been the focus of an overwhelming amount of fishery management effort.

The time has come to deliberately include "quality" as an objective of trout management. This doesn't mean

the "quality angler" has fared poorly under past management policies. Pennsylvania has a number of fly-fishing-only and fish-for-fun projects which seem to be highly regarded by many of the "quality angling set." We also have a wilderness trout stream program which is highly regarded by the "fisheries set" and by the devotees of a walk-in fishing experience, primarily for brook trout. (The brook trout anglers are generally "worm dunkers" but they have a full appreciation of a total angling experience and they don't feel compelled to use a split bamboo rod and wear a tweed hat to prove it!)

Paradoxically, many of our fly-fishing-only and fish-for-fun areas which provide "quality angling" are not on "quality" streams. This is due to the way special areas were established in past years — often based more on emotion and sociology than biology. (See "SPECIAL REGULATIONS — TIME FOR EVALUATION," *Pennsylvania Angler*, June 1977.) In contrast to specially regulated areas, the streams included in the wilderness program were established on the basis of facts — good social and biological data. That is the basis upon which all decisions for "quality" management should be made.

The facts needed to make "quality" judgements a factor in trout management will be, to a large degree, provided by the ongoing survey and inventory of Pennsylvania's trout streams. (See "INVENTORY AND CLASSIFICATION — A New Approach to Managing Trout in Pennsylvania," *Pennsylvania Angler*, April 1978.) Future considerations of "quality" will be based on more than simply reserving a stream or portion of a stream for fly-fishing-only or fish-for-fun. Even so, it is evident that factors taken into account in making judgements on "quality" will include the use of special regulations for "fisherman management" as well as fish management. Since "quality" is very subjective management, decisions will have to be based on more than biological data; however, the data collected through the statewide survey and inventory will be the starting point for developing a trout management policy which will provide alternatives acceptable to all trout anglers.

Ideally, future trout management programs in Pennsylvania will be

based on resource categories — what some folks might call stream classification. Management would, in general, be by categories. Study and evaluation could be conducted on representative waters in a given category and the results applied in managing all streams in that category. Whenever possible, the consideration of "quality" as a management objective would favor naturally sustained populations. Such management may be in direct contrast to the desires of the "average angler" and, lest "quality" be defeated by the democratic process, the "quality angler" is going to have to offer support and encouragement for such decisions. This will require forgetting such time-consuming concerns as whether artificial lures are as suitable as flies in a catch-and-release fishery and all of the many incidental items about which "quality anglers" become incensed.

Where we are — and where we go — in trout management will depend to a very great extent on angler reaction to and acceptance of changes in management programs. Unfortunately, it has been the experience of this fishery biologist that a significant portion of the angling public is very resistant to change. In the past our fishery managers have been challenged on every change that affected trout stocking unless the change meant "more and bigger" hatchery trout. This constant challenge to the judgment of qualified professionals may seem to be democracy in action and a way of "getting the attention of those bureaucrats," but it has to stop. If we are ever to achieve "quality trout management" in Pennsylvania, we cannot continue to be constantly on the defensive, reacting to challenge rather than making a deliberate, planned effort to effect a long-term change for the benefit of the resource and the resource user.

It is unrealistic to expect a staff the size of the Fisheries Management Section in Pennsylvania to develop long series data on every stream where a management change is made. It is also unrealistic to expect this staff to function effectively if they are loaded down with requests for fish-for-fun areas, fly-fishing-only, and with brush fires such as the Whitlock-Vibert box or fall fingerling stocking issues.

The message should be clear "quality anglers"! Before the professional

biologist and the "quality angler" get bogged down in bickering over what is or is not "quality fishing," let's concentrate on something we can both consider "quality" — wild trout and the environment necessary to sustain wild trout. The Fish Commission needs angler support for and acceptance of new trout management programs designed to achieve "quality" by recognizing the value of wild trout. In some cases, this may involve fish-for-fun or lure restrictions. It will definitely mean the end of stocked trout in some pretty popular streams. Whenever we quit stocking an area, it leads to stresses and pressures on the Commission — pressures that are all one way, **KEEP STOCKING!**

I believe "quality" should be a goal in trout management and that wild trout are an important part of "quality." If you, the "quality angler," agree, then you have an opportunity (in fact, you have a vested interest and a responsibility) to exert pressures to overcome the anticipated "Don't take my trout!" reaction to managing for wild trout. Will you do it? Or would you rather dissipate your energies

wrangling over such issues as the advisability of allowing trout season to stay open in the fall and whether flies are better for catch-and release than artificial lures, or by putting plastic boxes of hatchery trout eggs in streams in an effort to create "wild" trout, and bemoaning the loss of a fall fingerling stocking program? The choice is yours.

I hope your choice is to become actively involved as an advocate of management for wild trout. There are many ways to promote "quality" trout management. They have nothing to do with stream biota seminars, fly tying classes, or fly fishing clinics — consider, instead, things such as joining or forming watershed associations, participating in the Commission's Adopt-A-Stream Program, carrying the "message of wild trout" to local sportsmen who may never have realized the value of wild trout as an alternative to hatchery fish and rallying support for the Commission in conflicts arising over wild trout and "no stocking."

Let me leave you with one of the best descriptions of sport fishing I

have ever read. It is taken from the writings of T. G. Northcote, an eminent Canadian scientist:

"The practice of sport fishing is steeped in antiquated and delightfully inefficient methods of capturing fish which have undergone little radical change for centuries. Nor will these methods, like the properly conservative attitude of their proponents, probably change in the near future. If this be the case, and we continue to manage fisheries on the majority of our inland waters solely or largely for sport fishing, then it may well be a serious mistake to aim at anything near maximum sustained yields. To do so would require an intensity of effort so high that the recreational value of the fish would become greatly reduced if not negligible. Sport fishing is, after all, a sport and thereby should be an aesthetic experience pursued for the sustained pleasure of man, not the maximum sustained yield of fish flesh."

(Editor's note: How do "quality" anglers become actively involved? Read: The Golden Trout, pg. 16; Homes for Homeless Trout, pg. 22.)

Many anglers drive past streams supporting "superb wild trout populations to fish in a quality project."



Not your typical trout stream, is it?
Forbes Trail Chapter of TU turned it into one!



The Golden Trout

by Sam Hossler

photos: Russ Mason

This is not a story about the beautiful palomino trout we have in Pennsylvania or a tale of the golden-hued strain of rainbow found in some other state. It's a story of a mountain stream. Tumbling down from Laurel Hill Ridge in the western Allegheny Mountains is the Loyalhanna Creek. Clear and cool, this stream splashes over rocks and around giant boulders on its descent down the mountain. Deep pools, where trout hide and feed are formed, mountain laurel and rhododendron lean out over the stream banks providing shade and cover for the wily trout.

As this stream reaches the town of Ligonier on its journey west in the Allegheny foothills, it widens and becomes one of the best known trout waters of western Pennsylvania. The Loyalhanna has provided fishing for as long as man has inhabited this part of the world. The Indian speared and netted many meals from these waters and the fresh fish dinners it provided the early settler were a welcome change from the dried corn and wild

game diet normally expected.

Stretching westward to the Kiskiminetas River, the Loyalhanna was a main canoe route from Fort Ligonier to Fort Pitt, via the Kiskiminetas and Allegheny Rivers — although it traveled through some dangerous territory in the early and mid 1700's.

As the country became settled and prosperity came to the rolling hills of western Pennsylvania, man's greed and total disregard for his environment followed. Once beautiful hillsides were scarred with coal mines and the residue from them. King Coal was abundant and as water seeped across the high sulfur coal it became highly acidic, sulfuric acid was formed. Iron elements were also absorbed by the water and carried downstream where they would be dropped when water of an alkaline concentration is met. Red and orange stream beds became the mark of western Pennsylvania and fish life disappeared. But what of the Loyalhanna?

Wending way down the mountain-

side, the first town on the trip west is Ligonier. Coal had not been found throughout this mountainous area. Although many iron smelting furnaces had been built, they had been fired with charcoal. From Ligonier, the Loyalhanna flowed westward and U.S. Route 30, one of the first trans-continental highways was built, following its watery path for a short distance from Ligonier area to the industrialized town of Latrobe. Remember, at this time coal was king and the many mines around Latrobe were producing this high sulfur material for the great industrial complex in Pittsburgh, only thirty miles farther west.

Acid water runoff was common and from the late 1700's, when the first iron smelters were built, until the 1950's no one seemed to care. The streams were dead and the Loyalhanna from Latrobe to the Kiski-

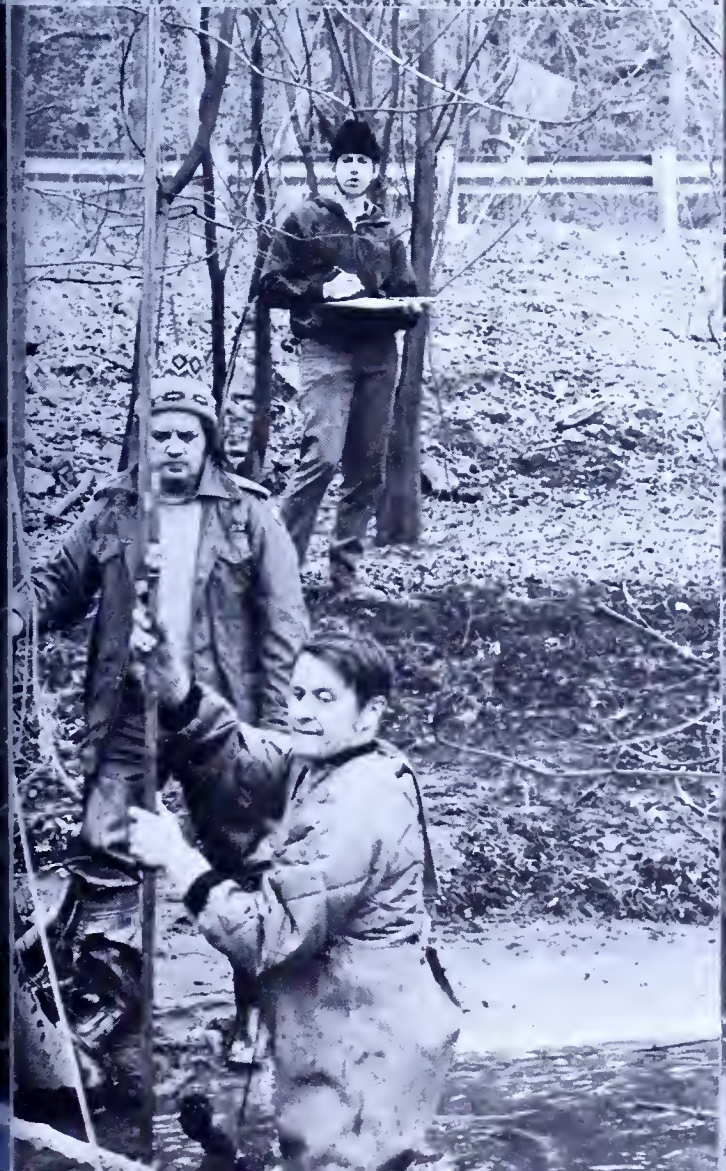
Although the members of the Forbes Trail Chapter of TU found there's nothing quite like heavy machinery for doing the heavier work, the project was not one of "machines only."

Surveying the area in preparing environmental impact studies and plain old reliable pick and shovel work were all a part of this most worthwhile project. The US Army Reserve 429th Engineering Battalion supplied all the heavy equipment.

minetas was a red, sterile stream. It was at this time concerned sportsmen joined with the Pennsylvania Fish Commission to persuade the Legislature something had to be done.

This is not the story of *that* fight for clean water: the Loyalhanna Creek upstream from Latrobe was still a favorite trout stream for anglers from Pittsburgh, as well as the surrounding area, and the waters had stayed clean throughout all of the degradation the lower section had endured. Man has a way of perpetuating destruction, however, and even without the disadvantage of mine acid he was able to strike a blow at the portion of the fishable water around Ligonier.

Route 30 had been a two-lane highway long enough and, with the growth of the town and surrounding area, a four lane highway bypassing the city was deemed necessary. The





Thanks to the 429th Engineering Battalion, heavy equipment made light work of moving tons of material.

challenge was met; the road expanded. Unfortunately, as with many other projects, no consideration was given to the stream that flowed beside it, nor to the fish life that inhabited that stream. The channel was *straightened* and *leveled*. Even that wasn't enough to completely destroy the fishing in that one-mile area. It might not have been as good as it was but an occasional trout could be found there.

Then, in 1972, Hurricane Agnes swept through the countryside leaving destruction and devastation in her wake. Streambeds were piled high with trees and assorted junk washed in from flooded towns. Near hysteria reigned in these communities — a potential start of another flood was all

they could visualize with the debris choking the natural flow of the streams. The Loyalhanna was no different and heavy equipment was ordered in to clear the streambed for two miles upstream from the town of Ligonier. To make it even "safer," the stream bed was widened and leveled making the normal depth of this now flat and wide stream approximately three inches deep.

Aquatic life can survive only in certain temperature ranges. Trout must have cooler waters and insect life could not possibly live in the summer sun-heated water which, at three inches deep with on substantial flow, reached the 80 degree mark. Two miles of trout water had been destroyed. The question of who was

responsible became academic, something had to be done.

In the spring of 1972 a new chapter of Trout Unlimited was formed in the area and the original 18 members named it the FORBES TRAIL CHAPTER. The first goal of this fledgling group was the restoration of the Loyalhanna Creek. This gigantic projection has been underway ever since and the chapter membership has grown to over 200 strong — an indication of what can happen when dedicated fishermen get together.

In order to get the project off the ground, environmental impact statements, maps and surveys had to be drawn up. The help and guidance of the Pennsylvania Fish Commission was sought. With their guiding hand

Unwanted "islands" were removed and hauled away, making it possible for new desirable channels to form.





A pool, a riffle, and a stabilized streambank alongside the highway: all were a part of the TU project.

The necessary paper work was completed using professional services provided by chapter members. It was time to get to the actual work. The U.S. Army Reserve 429th Engineering Battalion was contacted and their help in men and equipment enlisted. Wavers from construction unions had to be approved and local businessmen contacted for the use of trucks, equipment and materials.

While the 429th Engineering Battalion graded off one island and removed another, deflectors and gabions were being constructed. These would give the current a slight change in direction and pick up the water's velocity. Ultimately, all this would help hold the water temperature down during the scorching sum-

mer months. It would also provide shelter for the fish and an acceptable environment for aquatic insect life which enable the trout to have a constant supply of natural food.

In one stretch of the stream alone eleven bluestone deflectors were built — the largest required over 550 tons of stone. The stream banks were ripped as the stabilization of the sides was of major concern. At the very upper end of the section being worked on, a mammoth stone deflector was constructed to direct the current, during normal conditions, to the opposite side of the stream from the graded area. This will eliminate any chance of having a large, flat section of water which could heat up and cause trouble again. During high

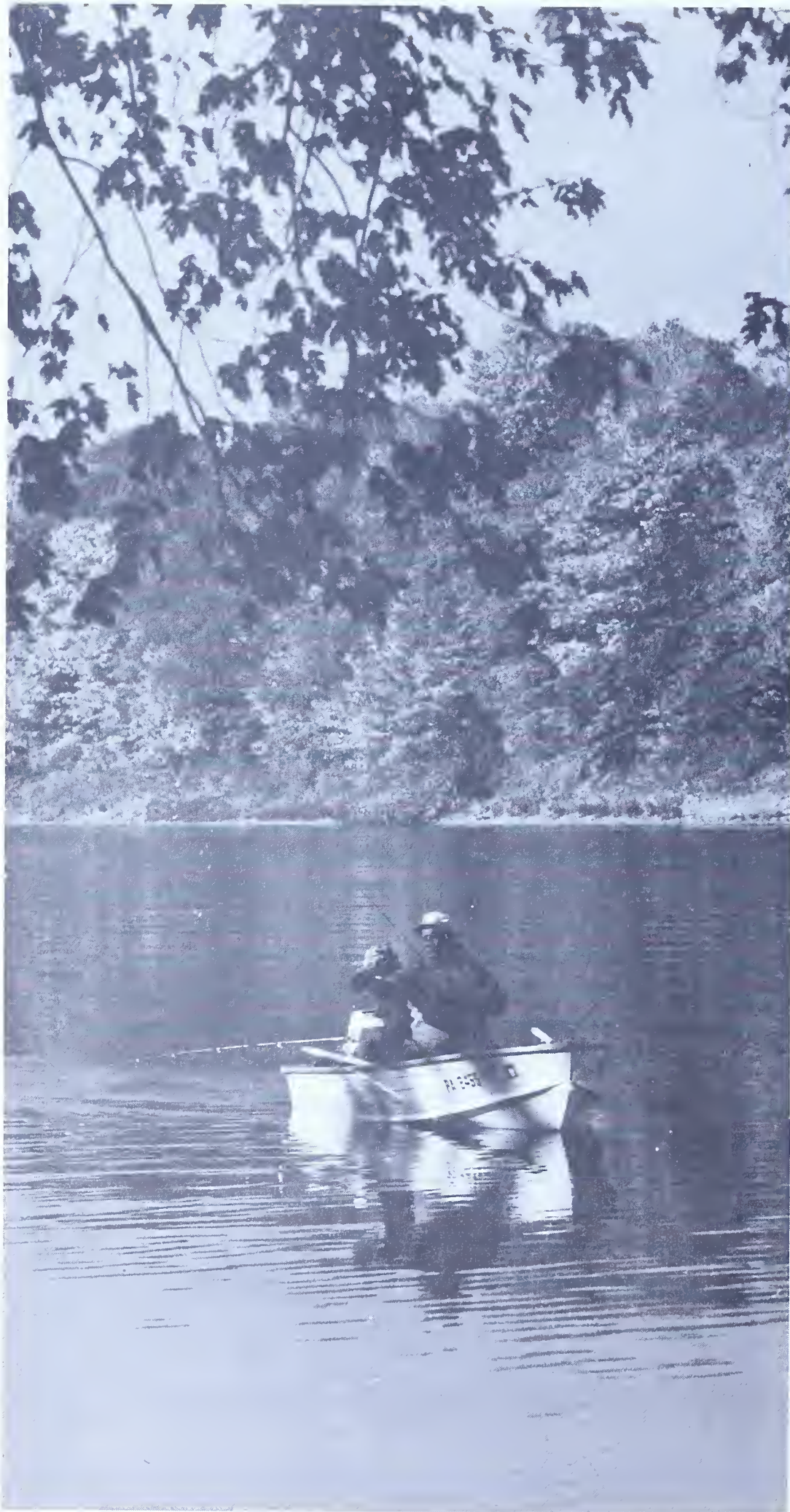
water the excess flow will spill over this deflector and gradually be dispersed across the stream bed.

Grass and trees have been planted and more work is still being planned to return this section of the Loyalhanna Creek to the super trout water the old-timers tell us it once was.

In 1977 the National Trout Unlimited organization bestowed the coveted Golden Trout Award on the Forbes Trail Chapter for their work on Loyalhanna Creek. This is the highest honor any chapter can receive for stream improvement and restoration work. Pennsylvania can be proud of this relatively new Trout Unlimited Chapter who brought a "*Golden Trout*" to the Keystone State.

Deflectors in place, this section of the Loyalhanna now provides trout population more suitable habitat.





Anglers can be assured of good fishing on the Delaware River almost any time of year and for a great variety of fish. Photo by Tom Fegely.

Fishing the Delaware

by Timothy J. Michels

When living in Philadelphia, fishing can be a frustrating experience. There are some good spots for trout and bass nearby, but the best waters are often crowded during the best times of the year. Catfish and carp offer plenty of action, but the angler wishing for more variety, and more prestigious fish, will often travel many miles to satisfy his fishing desires. However, only a short drive from the city will put the fisherman in relatively unfished water which also offers tremendous fishing variety. My brothers and I fish the Delaware River in and near Washington Crossing State Park, just south of New Hope. Much of the river is fast water here, but that, coupled with numerous pools and eddies, results in a wide range of fish habitat.

Some smallmouth bass are present in this section of the river but largemouth are much more frequently caught and have therefore received more of our attention. An average largemouth is in the eleven- to twelve-inch range, our largest being a four-pounder. Night crawlers drifted into the headwaters of pools attract their attention but it is more fun to tempt them with lures. We have had some success with spinnerbaits, plastic worms and topwater plugs, but minnow-type plugs and spinners have proven to be our most productive lures. The fish seem to prefer these lures in silver colors.

Although the largemouths are usually found in comparatively still water, some fish are caught in the swiftest parts of the river. On one hot August morning, I was fishing a large

bucktailed spinner in fast, shallow water, while standing on a huge rock close to shore. While admiring the enticing action of the lure at the end of my retrieve, I saw a large greenish form shoot out from under the rock I was standing on. It was the largest bass we caught all year.

Many times the river bass get lockjaw and at these times no bait or lure can tempt them. We had been fishing one of our favorite bass spots one day, trying lures, and drifting worms into the pool, but with no success. The water was low and clear, and our fishing partner made his way downriver along the bank. He spotted a school of bass hugging the bottom of the pool we had just fished. We watched as the bass moved slowly out of the way of all our offerings, showing no interest, and not even giving our best and most tempting presentations a second look.

One slow summer day, while fishing at the same pool with similar bad luck, I fastened a night crawler onto my #2 Mepps spinner. It proved to be a hot combination. After an hour, we had run out of worms, but had caught a largemouth, a channel cat and many white perch. Although small, the perch hit hard, fight well for their size and are very numerous in the river. Although a worm/spinner combination has proven to be most productive, the white perch are also caught on unbaited spinners, small jigs, tiny plugs, and worms. A strike on every cast is not unusual once a school has been located. The fish shun lures in the colder fall and spring months, when water temperatures are low. At such times bottom fishing with bait often is all that will catch them.

While fishing a spinner/night crawler combination we have also caught two walleyes. Both fish were caught in the summer, in shallow water, around midmorning. Our winter, spring and fall walleye fishing has not been successful.

Pickrel are also present in the river. When fishing for bass with spinners or minnow-type lures, one of these airborne acrobats will occasionally turn up. My brother, Big Jim, while fishing a small plug, caught a "pickrel" that turned out to be a musky. On a rainy day the following year I caught another one on a red and white spoon. Although these fish were not legal size (the larger of the

two was 22 inches), we have heard reports of large fish being taken. We have seen small muskies around and one day I came upon a water snake on the bank with his catch — a 4-inch-long musky. The snake was only about 18 inches long and was having some problems with the thrashing fish. I guess muskies never give up without a good fight. I sat on a rock nearby and watched the snake, undisturbed by my presence, work his way up to the "jaws" end of the fish and commence swallowing it.

Members of the catfish family are very common in the river. Channel cats offer the best sport, often hitting spinners when fishing for bass. Although we have never tried it for bait, river herring has the reputation of be-

April is a good time to fish for carp. Since suckers are also hungry at this time of year, we usually rig up with small hooks and use small earthworms for bait.

For the panfisherman, the river offers bluegills and other sunfish. They can be caught on everything from the traditional worm and bobber to lures that are almost half the size of the fish. Crappies can be caught around rocks, brush, or sunken trees in calmer parts of the river. Slowly retrieved, small plugs, spoons, spinners or jigs get results. Crappies are not abundant in the river but occasional specimens caught are over a foot in length. Rock bass and yellow perch are occasionally caught. One summer my youngest brother, Dave,



Catfish are abundant in the Delaware—both channel and white catfish.

ing one of the top catfish baits around. The herring run up the river in the spring and can be caught on small, gold, unbaited hooks. We have had good catfishing with night crawlers, catching channel cats, white catfish, and bullheads. Catfishing in the river, particularly for white catfish, is often best when the river is very high and muddy.

While fishing worms in the pools, carp are frequent customers, and tough ones. When a heavyweight carp starts heading for the Jersey shore, or heads downriver with the aid of the swift current, the angler with light or medium weight equipment is in for an endurance test. Late March and early

caught a perch-sized striped bass. On another occasion, a fallfish took a night crawler.

The river also has more to offer than good fishing. Their air is usually laced with hawks, which add a dream-like quality to the smooth hills and the rapidly flowing sheet of water. We shared the river with a pair of ospreys on every weekend that we fished last fall. One early spring morning we were surprised to find a beaver swimming by us. The unexpected often becomes the normal on a Delaware River fishing trip. With the proper equipment, some patience, and a willingness to experiment, give the river a try.



The author, above, inspects a channel deflector placed in Bobbs Creek by the Blue Knob Conservation Corps.

More "Homes for Homeless Fish" ... in BOBS CREEK

by Ron Tibbott

Hydraulic Engineering Technician

Photographs by

RUSSELL GETTIG	LAURIE E. USHER
Staff Photographer	Blue Knob YCC
Office of Information	Environmental Education Director

If trout could talk, the browns and brookies of Bedford County's Bobs Creek would have a quick and unanimous answer to the question: "Who are your best friends?" — "*the members of the Blue Knob Youth Conservation Corps, of course.*" These young people certainly deserve that distinction for their efforts in providing more desirable homes for the stream's residents.

Blue Knob State Park hosts this residential YCC Camp, whose 36 members plus their crew leaders have contributed much to the field of conservation both within and outside of the park during the past two sum-

mers. In cooperation with the Blue Knob staff, as well as personnel from other state agencies, they have accomplished such varied activities as park building maintenance, timber stand improvement and hiking trail and bridge construction. In addition to their fish habitat improvement work on Bobs Creek, the YCC's involvement with the Fish Commission included creation of a reptile and amphibian display for the Visitor's Center at the Reynoldsdale Fish Cultural Station. Also, while not exactly conservation oriented, the Corps members performed a valuable community service by assisting

Johnstown area residents in cleaning up the aftermath of the July flood.

Late spring of 1976 saw the beginnings of the stream improvement project as Pennsylvania Fish Commission Fisheries Environmental Services and Law Enforcement personnel conducted field surveys and staked out locations for various devices designated to optimize the stream's potential as a trout fishery. An education and training session in mid-June helped to prepare the crew leaders for the first day of actual stream improvement construction. Work began just below the upstream park boundary on a wide, shallow stretch which had previously been bulldozed in a questionable attempt at protecting the adjacent roadway. A series of log frame deflectors, intended to divert the flow of water away from the road and narrow the stream to scour a deeper clean channel were nearing completion when a cloudburst sent torrents rushing down Bobs Creek. The next morning revealed little evidence of the third deflector on which the crews had worked the day before. Materials piled on the bank were gone and laboriously dug trenches were completely filled. Temporary discouragement returned to only slightly dampened

(literally) enthusiasm as the first two deflectors were found to be intact and functioning as planned; evidence of a deepening channel off their tips were already quite obvious.

Satisfied that their work was not in vain, the YCC members went right back to digging trenches, pinning logs and carrying stone to make Bobs Creek a better place for trout to live. Despite recurring high waters, by summer's end a channel block (to insure that low flows would be concentrated in one fish-holding channel), sections of riprap bank protection and removal of excess debris, as well as several more deflectors, were completed.

Low water during the planning sessions prior to the 1977 season showed the value of the past year's work — many trout were observed feeding and resting comfortably around the devices. A few months later, electroshocking demonstrations, conducted by Commission personnel for the Corps members' benefit, indicated a similar distribution of the trout population.

Things went smoothly as the new YCC crews resumed the project in early summer of 1977. After a few

days of routine maintenance work on the existing structures, including a number built by a park-sponsored Manpower crew in the fall of '76, anticipation was great for continuing downstream with an even more productive habitat improvement project during the remainder of their eight-week program. Progress was steady, with several devices constructed, when disaster struck not only Bobs Creek but also much of westcentral Pennsylvania on the night of July 19. Nearly ten inches of rain dumped in such a short time inundated the narrow stream valley, wall-to-wall!

Bobs Creek had really done it this time! As the water receded, damage assessments were begun, disclosing unbelievable alteration of the streambed and accumulation of debris. Where did it all come from? Several deflectors were gone without a trace, or buried under tons of rubble. Most of the other structures sustained at least minor damage. Discouragement again prevailed among the YCC workers until closer observation revealed some gratifying facts. Without exception, the devices had done their jobs — channel blocks

effectively preventing excessive erosion of the banks and overflow channels, and deflectors causing the scouring of beautiful, deep, trout-holding runs, the extreme volume and velocity of flow enabling them to accomplish years of work overnight. Even the deflectors that washed out had fulfilled their intended purpose during the last few hours of their existence. The fish habitat improvement devices had worked with the floodwaters in creating some of the most desirable water a trout, or a fisherman, could ask for.

Once again assured that their labors were not wasted, the YCC'ers began the cleanup. Although at the time it was generally conceded that removing the tangled logjams from the flood plain would easily occupy the program's remaining work weeks, the crews showed their diligence by quickly knocking off this task and going on to repair all the damaged structures and even completing one more large deflector.

At the end of the '77 season, counting the Manpower project, the score of functioning devices stands at six log frame deflectors and six channel blocks plus numerous instances of riprap and debris removal. By improving the quality of trout habitat, especially during low flow periods, this cooperative effort between Blue Knob State Park, the Pennsylvania Bureau of Forestry (provided equipment and marked trees to supply logs), the Pennsylvania Fish Commission, and mostly the Youth Conservation Corps members themselves, has indeed provided many "homes for homeless fish" in Bobs Creek, not to mention a more productive stretch of fishing water for the Commonwealth's anglers. But the benefits of the project are not limited to the aquatic environment alone. These young people learned a great deal, and share a deep satisfaction in having worked with their hands to help Mother Nature in her constant striving for perfection.

Winter is the time when all those involved with the Bobs Creek YCC project, while reflecting back on past years' accomplishments, eagerly await spring weather so that once again trout can be seen finning contentedly in their new homes and plans can be laid for another successful segment of this continuing program.



Stream improvement is hard work but the young crew was up to the task.

Below: electroshocking demonstrations, presented for the benefit of the Corps members, proved the value of the work done a year before.



How to Improve Your Dam Fishing

by Gerry Kingdom



These two young anglers fish the river dam near the town of Susquehanna.

"Come here, quick" called my wife, Linda, from a railroad trestle high atop a hill. She had been surveying, through a pair of field glasses, a Susquehanna River dam near the little town of Susquehanna, in the northeast section of Pennsylvania. "Those guys down there on the dam just took out a nice fish, and they seem to have a stringerful of them."

"Well, let's go down and have a look," I exhorted, as I locked the door of our Jeep, and tried to arrange my gear for portage. "Maybe we're in for some action!"

With the help of a few well-placed trees, we descended the high slope, climbed the dam wall, and walked the water-topped, three-foot-wide ledge toward the busy twosome.

Before I was able to light up a conversation, an old-timer, seated atop an overturned wooden crate, volunteered some handy information.

"We got some beauties," he said proudly, as he hoisted a stringerful of hefty walleyes from out of the water. "Just set yourself up over there and get started before it's too late."

"What're they hittin' on?" I asked, looking back at the old man, as we hurried to a spot that seemed attractive.

"Hellgrammites," he responded. "Don't use nothin' else!"

Naturally, the only thing we hadn't brought were hellgrammites, but I did have several little brown rubber imitations that were almost as ugly, so my wife and I rigged up.

It didn't take long before she was wall-walking a weighty walleye toward the shallow end of the dam, and before you could count your fingers she was raising high a netful of frisky dinner.

For an hour or so later, we were able to enjoy superb angling action and we finished the day with six semi-lunkers enough for several hardy meals over the next few days.

Since that time, we've been devoted dam fishermen, who rarely pass up an opportunity to test the bubbling white that froths at the base of an overflow of water. And we've learned that dam fishing is a special art that requires a good deal of insight and savvy.

Here are some pointers that we've picked up over the years that can help to increase your dam fishing odds dramatically.

First, since deep pools usually



Lawrence and Patrick Spegar show off their Susquehanna River Walleyes.

underlie the falls, where years of heavy turbulence have dug deeply, weight your bait with a small sinker and allow it to hit bottom before reeling it back up. Don't let it lie still for long though, nothing is more unnatural than a motionless bait lying in a chasm beneath swirling waters.

Second, obstructions such as fallen timber, that have come to rest above or below the spillway, are attractive hideouts for lunkers feeding on forage passing downstream. Look for these, and if you can reach them safely, don't pass them up.

Third, always use the flowing water to your advantage. Cast your bait or lure into the cascading water, and let it flow naturally in the pool below. Don't drop it into the pool as if it fell from the air. When using this approach, look for churning currents into which you can target your casts. Aim your bait at the breastwork of the dam, and allow it to drop naturally into the swirling pocket.

Fourth, when fishing near a dam, keep an eye open for bays and inlets that are a half mile or less downstream

from the dam. These are excellent holding areas for fish whose migration upstream has been impeded by the dam.

And finally, fishing beneath a dam overflow is exceptionally productive after a heavy rainfall. Since river banks are washed by rising tides, more bountiful food supplies are available to feeders beneath the dam, and excess water increases the spillover, enabling the food to reach them. Don't pass up this prime opportunity.

Successful dam fishing requires not only great skill, but also extra precaution. This is especially true when fishing huge power dams where water is periodically released, causing tailrace waters to swell quickly.

Boaters who fish beneath such dams can find themselves with a boatful of water, if the excess in a impoundment is released to flow downstream. And waders perched atop shoreline boulders can run into considerable difficulty when the rocks they are standing on suddenly become islands.

When walking atop the wall of a spillway, the angler should be espe-

cially cautious. Slippery moss coverings are extremely dangerous. Skid-proof shoes or boots are highly recommended for this type of angling.

(Editor's note: Fishing is prohibited from the breastwork of spillway areas of PFC and DER impoundments as well as many privately owned dams open to public fishing. Anglers are cautioned to check trespass regulations before engaging in such activity.)

For the dam fisherman, bait selection often spells the difference between success and failure. Crawlers, such as hellgrammites, which are often uprooted by overturning shallow water rocks, and then caught downstream in a seine net, are unbeatable as fish fare. Minnows, of course, also work well.

Among the artificials, spinners and silver wobblers work best in pools beneath the dam. Plastic worms and lizard-like imitations are productive when cast into the spillover, and jigs are effective from atop the breastwork.

Always keep in mind that fish at the base of a dam spillover are active, aggressive feeders. Therefore, sticking with an unproductive lure for any great length of time is foolish. Change often, until you find one that works.

Even though dam feeders are aggressive strikers, their hits can be camouflaged by rapidly swirling currents and jagged rocks. Take no chances. If you are uncertain of whether or not a line tug was a strike or simply the lure hung up momentarily, give it a hit. Many hefty dam lunkers are missed by anglers unduly delaying their strikes.

Besides the post-rain days mentioned earlier, hot days are best for dam fishing. And with good reason. Dam spillovers bring oxygen to the base of a dam, and oxygen in turn brings much needed relief to weather-weary fish. So when the dog days of summer make it too hot for lake fishing, head for the nearest spillway. You may just run into a lunker or two who have headed in the same direction for some good "fresh air."

There are about 3000 dams in the state of Pennsylvania, 400 of which are "major." Many of these offer top quality fishing, and more than a few are probably within easy driving distance of your home. Look for these in your travels, or ask some fellow fishermen about them. They may lead you to some darn good fishing!

FLY TYING

Special Techniques in Fly Dressing

by Chauncy K. Lively
photos by author

Part II— More About Cut Wings

Quill sections of wing feathers—particularly those of waterfowl—have been used for many years to represent insects' wings in dressing both wet and dry flies. Some of the patterns described by Dame Juliana Berners in her *Treatise*, published in 1496, had wings of quill sections and it is probable their use predated Dame Juliana's work by an undetermined number of years. The continued popularity of these wings over such a span of time is no accident because the material has many redeeming qualities. Duck primaries are available in various shades of dun to match the subtle colors of many mayfly wings, while turkey and pheasant wing feathers furnish mottled configurations often required.

It is elemental that the quill sections for each pair of fly wings be taken from feathers of approximately the same size from opposite wings of the bird. The feathers are generally scored to desired width with scissors points, then cut, relying on a visual matching of the two. However, if you have access to a draftsman's divider you have a handy tool for quill wing making. Simply set the points of the divider to the desired wing width and you can score matching quill sections with precise accuracy.

In the conventional method of dressing upright quill wings the quill sections are first placed back to back, held together on edge atop the shank and bound in position, downing style. Then they are held upright and secured by turns of thread behind the wings. The result is a pair of wings with pointed tips and roughly resembling mayfly wings in shape. However, the pointed tips sometimes curl slightly, due to the rearrangement of the quill fibres when the wings are pulled

erect, and this can cause the fly to spin during casting. I discovered that this problem could be overcome by trimming the tips round, eliminating the troublesome points and at the same time, dressing up the fly's appearance a bit. For the job of rounding the wing tips I've found nothing better than a tool called the Wing Cutter, marketed by E. Hille of Williamsport. It has a wooden handle, attached to a rocker-like cutting blade bent in the profile of a tapered U. It was originally designed for cutting hackle wings to shape but it has many other uses, not the least of which is the shaping of quill wings. I don't recall the exact year I purchased my Wing Cutter from Hille but I'm certain it has been in use for over twenty-five years and it's still going strong. Occasionally I sharpen the blade with an Arkansas Stone but that's really the only maintenance required.

When I tie quill wing dry flies I generally make up a number of wing pairs in advance and cement each matching pair together at their butts. Then each pair is pressed flat against a rigid surface and, holding down the pointed tips with my thumbnail, the Wing Cutter is applied and both wings are shaped together. When I'm ready to tie, the cemented butts are snipped off and the wings are dressed in the conventional way. If your wings are misaligned after they are drawn upright, make a loose loop of thread completely around the base of the wings. Then hold the wings together in the upright position and in proper plane of alignment while tightening the loop. After separating the wings with your bodkin and setting the angle desired, your wings should now be locked in perfect alignment.

If there is a fault with quill wings it is in their lack of durability, particularly as upwings, which appear to be more vulnerable to the teeth of trout. Some years ago I began to experiment with coatings to increase the longevity of these wings. Lacquer was tried first but soon discontinued because it often warped the wings out of alignment. And on the rare occasions when the wings remained flat, the lacquer coating would lift off after a few wettings and dryings. A varnish coating proved very durable but it was slow in drying and added too much weight. However, coating only the wing tips with varnish proved a good compromise but the

long drying time made its use limited, at least to me. When Pliobond was introduced it showed promise as a quill wing coating: it had good durability and it remained flexible when dry. But it gave the wings a brownish cast and, in use, possessed an odor that would clear anyone's sinuses. Then I discovered the cement used with vinyl patching kits and it seemed to fill the requirements reasonably well. It was water-clear, it dried fairly fast and most importantly, it didn't stiffen the wings appreciably. I apply a thin coating of vinyl cement to the inside surfaces of upright quill wings after they are secured in position, having found through sad experience that if the wings are pre-coated prior to tying, the thin thread will cut through the quill.

The thin vinyl coating does not render quill wings indestructible but it does prolong their life considerably. Eventually, if they are doing their intended job, they will split; but, generally, in a single break, not a multi-fibred splintering which often occurs with uncoated quill. A single split in a coated wing doesn't materially alter the wing's shape and the fly can still be used with effectiveness. And a simple split may be repaired at home by applying vinyl cement to the edges of the break and remarrying the halves.

Vinyl cement is available in hardware and variety stores, generally in convenient tube containers, at reasonable prices. It is important that the cement be thin and free-flowing; if it is thick and lumpy it will stiffen the wings. Fly Fisherman's Bookcase — and I'm sure other fly tying material dealers, as well — carries bottled vinyl cement in the proper consistency for fly dressing.

Quill wings have withstood the test of time and they still play an important role in fly tying. They are not particularly well adapted to large dry flies — in the range where cut hackle wings excel — but in sizes #18 to the smallest they do a superb job.

Nowadays fly tyers are paying quite a lot of attention to synthetic materials and some show fascinating possibilities. Last year Barry Beck, of Cahill House, introduced me to Micro Web, a thin, textured, cloth-like synthetic that lends itself well to fly dressing, particularly for flies of medium of large size. It is marketed in natural

white strips but it is easily dyed with ordinary household dyes and I especially like it for caddis wings, which may be formed quickly with scissors. Mottling is achieved by stroking a dark marking pen at random over the textured surface.

With the growing scarcity of many natural materials formerly taken for granted, synthetic materials are assuming a new importance as substitutes. I'm sure there are many synthetics too obvious to be noticed, just waiting to be "discovered" by creative

fly tyers. A good example of an uncommon use of a common material may be attributed to some of the veteran anglers of Chambersburg, who tie tiny Tricorythodes spinners with clear wings cut and shaped from Saran Wrap!



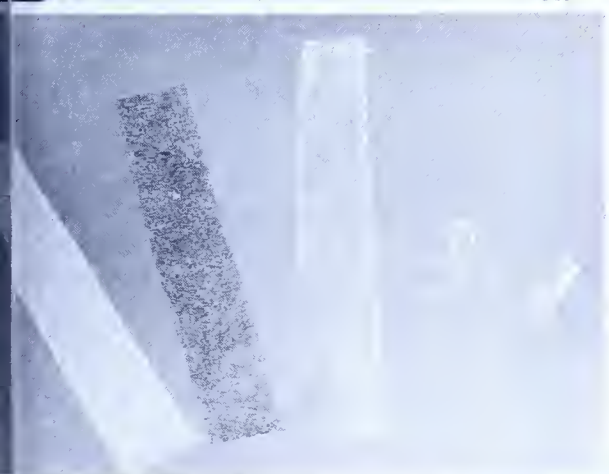
Left — Dividers (left) and Wing Cutter (right) make the dressing of cut quill wings a precise and easy job.

Right — Upwings are first secured downwing style.



Left — Holding the wings in position and applying a locking loop.

Right — (Top view) Coating inner wing surfaces with vinyl cement.



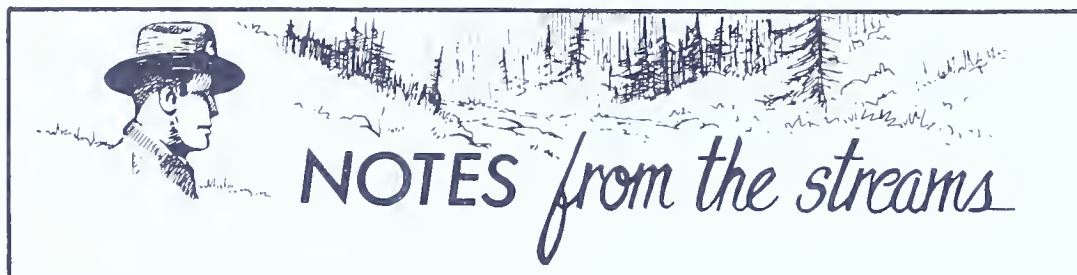
Left — Micro Web-natural white and dyed strips. For caddis wings first cut a rectangular strip of desired dimensions. Then shape with scissors.

Right — Mottling Micro Web wings with marking pen.



Right — Upwing dry flies with shaped quill wings and caddis dries with Micro Web wings.





MIND OVER MATTER?

While walking along the bank of the Raystown Branch one morning, I heard a movement in the thick underbrush. Closer inspection revealed a full-fledged battle taking place between a brown thrasher and a black rat snake. The odds were quite lopsided with the snake being at least five feet long and the thrasher weighing all of several ounces.

Although I did not see it, I'm sure the bird had a nest hidden somewhere nearby and the snake had plans for a breakfast of thrasher eggs. Time after time the bird would rush at the snake flogging it with her wings. The snake simply would not give ground and after a few minutes of watching I decided to depart, without interfering, and let nature take its course.

As I walked away I couldn't help admiring the courage of that little bird taking on that big snake. And I also laughed a little when I thought about the many seasoned outdoorsmen who almost proudly admit, "I'm scared to death of snakes."

James T. Valentine
Waterways Patrolman
Huntingdon County

NOW THEY KNOW HOW!

Deputies Bob Hoenstine and Ed Hammers taught a summer course at the Huntingdon School District on the Basics of Fishing. After several classroom sessions all was in readiness for the first field trip and a chance for the students to try their newly learned skills. The site chosen for the experiment was a deep hole underneath a bridge on the Juniata River. Results of the first day were amazing when a 30-inch northern, and a 37-inch carp were landed by the students. This certainly is a tribute to two fine "fishing teachers" and two fine deputy waterways patrolmen.

James T. Valentine
Waterways Patrolman
Huntingdon County

NO "SMOKEY"!

On July 29, 1978 I received a call from Deputy Game Protector Don Zimmerman and he asked if I could go along with him to pick up a bear that was shot. After

arriving at the scene we loaded the bear on a rack on my patrol car and headed down Route 219 en route to District Game Protector Dan Marks' residence. While passing an "18-wheeler" on Route 219 we heard the following over my CB radio: "Hey, Good Buddies, here comes a *real bear*, southbound on Route 219!"

Robert L. Kish
Waterways Patrolman
Cambria County

TALLEST TALE YET!

Recently, after presenting an evening program at the State Police Camp Cadet, several of the staff were fishing in the camp lake. The lake has some big large-mouth bass lurking in its depths, so everyone was anticipating a trophy, as all fishermen do.

Just at dusk there was a big splash near where I was standing. Well, assuming the angler, Trooper John Lechner, had hooked a monster bass I and other staff members, Trooper Jim Kramer and Trooper Bob Lewis went to John's aid. When we got to where we could see the battle, all were surprised to see John with no rod in his hand and taking off his shoes and rolling up his trousers. When we asked what happened, John replied, "A big fish took the rod right out of my hand." However, a nearby lad, one of the campers, stated that it didn't happen exactly that way. It seems John was making a cast and lost his grip on his tackle and it went sailing into the lake. I'm sure if it wouldn't have been so dark we would have seen a red face. Can you imagine the fish story if that lad wouldn't have been there?

Larry V. Boor
Waterways Patrolman
Mercer County

NEW TWIST?

Mr. Dennis Shivok of Allentown was fishing a local lake for crappies and had a stringerful of these little fighters hanging over the side of his boat. After a while he noticed a lot of splashing and thrashing in the vicinity of his stringer and looked over to see what was going on. He was surprised to see quite a large musky trying to make a meal out of one of the crappies, but the

musky couldn't get the crappie down the hatch because of the stringer. Dennis, making the most of this opportunity, did not disturb the stringer, but quickly threw in a minnow, caught another crappie and rigged it up on a larger hook. He deposited this crappie near the musky, who was still hanging around and, sure enough, the musky succumbed to this temptation and was immediately hooked.

The fish gave Dennis quite a fight, wrapping around the anchor rope and causing him to cut it before he could land the fish. Finally he was landed, a beautiful 39-inch tiger musky!

Fred Mussel
Waterways Patrolman
Lehigh County

CRAPPIES GALORE —

I have fished many lakes in Pennsylvania, and I have yet to find a lake to compare with Nockamixon for crappie fishing. During the early spring months, crappies up to 11 inches can be caught all over the lake. During the summer months, the rocky piers, shorelines and bridge crossings are good about two hours before and up until dark. Most of the fish caught are black crappies with occasional white crappies being taken ranging up to 14 inches.

One should be equipped with ultralight or light action equipment using 4-pound-test line or less. Small minnows are very good, but many anglers prefer 1/16th & 1/32nd ounce jigs or small "twisters." The latter are preferred because one does not have to bother with baiting up or worrying about running out of bait.

At times, attaching a small float about three feet above the jig will help you catch crappies when a standard retrieve is not producing. Pull the float about a foot and let it settle back to the jig. Sometimes the float will remain on its side indicating that a crappie has hit the jig and taken the weight off the float.

Crappies are also excellent table fare and are easily filleted. So, if you want some fishing fun, try Nockamixon Lake located on Route 563 about 4 miles east of Quakertown. In my opinion, this lake has the best crappie fishing in the East.

Stan Plevyak
Waterways Patrolman
N/Bucks County

THE ROOKIES —

Approaching sundown on one of my days off, I received a phone call from the Harveys Lake police requesting assistance from the nearby Dallas Police Department in the apprehension of some robbery

aspects who they thought were out on larveys Lake in a boat. When I arrived at the preset meeting place at the lake I was met by several patrol cars and at least a half dozen uniformed and plainclothes officers. After getting a description of the vessel, one plainclothes officer and I went out on the lake in the Commission patrol boat. In no time at all we located the suspects' vessel and, noting a number of boating violations (which included six persons aboard, all under the influence of alcohol, no registration aboard, towing a water skier after sunset, standing and walking around in a vessel while it was underway, no backfire flame arrestor on the inboard engine, etc.), I order the vessel back into the Fish Commission access area boarding pier where I informed the owner/operator I would discuss his violations more in depth. When we arrived at the dock the vessel was tied up, the waiting police made the arrests, placed the suspects in handcuffs and transported them to a local magistrate for arraignment. (All in a day off" for a waterways patrolman.)

Claude M. Nelfert
Waterways Patrolman
N/Luzerne County

Y DEGREES . . .

Kenneth Corle, of Warren, recently proved his ability as a "CLASS II" angler at the Tailwaters of the Kinzua Dam by catching a blind (in one eye) brown trout which also had a slight paralysis of the body. This fish won him a Fish Commission Angler's Award for being over 25 inches in length. About one week later he repeated his ability by hooking twoalleyes at once. It seems they were attached to someone's lost stringer and Mr. Corle hooked the stringer. Keep up the good work, Ken, you are on your way to becoming a "FIRST CLASS" angler.

Paul R. Sowers
Waterways Patrolman
Warren County

SPECIAL THANKS

A well-known face among the anglers and fish truck followers in Armstrong County is that of Art Campbell, better known as "Pump." Pump was a Deputy Fish Warden" for years under retired Waterways Patrolman Anthony Discavage and, when Tony retired, Pump retired also. But, it must be known that Pump Campbell has not missed helping net or bucket the fish from the fish truck or missed a stocking in over 14 years. Also, a special thanks to Bill Gates of Troy Hill near Attanning, for not having missed one stocking in 1978. Bill's old Jeep truck has

been used many times for those hard-to-get-to places along a stream. The sportsmen and fishermen and especially the Fish Commission gives these men a Special Thanks.

J. R. Smith
Waterways Patrolman
Armstrong County

SHE SHOWED 'EM!

My wife, Sue, decided the old adage: "If you can't beat 'em, join 'em" applied to her quite well and purchased a fishing license. Now being the fine husband and father that I keep telling her I am, and our son, Eric, being the fine son he keeps telling us he is, we decided to take her fishing and give her a few pointers from the "pros."

Total catch for an hour of frustration: Son: 0, Husband: 0, Wife: 1 nice bluegill and 1 nice yellow perch.

Ronald L. Hoffman
Waterways Patrolman
S/York County

BETTER & BETTER!

I am always bragging about the excellent fishing in the Juniata River. It has gotten to the point where I get a little self-conscious whenever I tell of one incident or another pointing to this fact. It has almost gotten to the point where I sound like a proud parent bragging about his perfect child.

I have to do it again by relating an almost unbelievable tale of the excellent rock bass fishery the river offers. A man from the Altoona area came to Mifflintown and fished with his son for three days in the Juniata. In that three-day period, the two limited out in rock bass — that's right, three hundred rockies! And nice-sized fish, to boot.

Patrolling this past spring, I have not heard anything but very positive comments about the rock bass in the river this year. On one evening, two deputies and I checked an estimated 150 rock bass on stringer. Everyone we checked had at least 9 or 10 nice-sized rockies. Each year it gets better and better.

Larry Baker
Waterways Patrolman
Mifflin/Juniata Counties

MOVING?

Send us both your
old and new addresses
with both zipcodes.

"BE RIGHT BACK!"

During an inseason stocking of Big Traverse Creek (in my former assigned county — Beaver), Deputy Mike Symbala and I noticed a lone fisherman beneath a bridge. The angler looked up and smiled when he saw the fish truck, figuring this was his lucky day. Soon the fellow stopped smiling and started up the bank. As he was walking past us Mike asked, "Leaving kind of early aren't you?" The fishermen replied, "Yeah, do you know what I did?" Puzzled, both Mike and I said, "What?" "I forgot my license" the fellow moaned. I inquired, "Do you live nearby?" "Just up route 30 a little ways . . . I'll be right back", he smiled.

Don Parrish
Waterways Patrolman
McKean County

NEWCOMER —

The Commission has, on occasion, stocked striped bass in the Raystown Lake. These stockings have so far proven successful with large fish being caught in the lake. It appears as if there is now an added bonus, stripers in the Juniata River. A few weeks ago I checked a striper that measured almost 28 inches long and weighed just shy of 8 pounds. This fish was caught in Mifflintown, quite a few miles below the lake. Apparently some of the stripers are making their way out of the dam and into the river. As if to prove this incident wasn't a complete fluke, another striper measuring about 6 inches was caught only a few days later, a few miles farther downstream. I would be interested in knowing how many were caught on the opening day of bass season this year when the river was fished about as hard as it can be. We may be in for a bonus fish to be added to the large population of gamefish already in the river awaiting the state's anglers.

Larry Baker
Waterways Patrolman
Mifflin/Juniata Counties

LOCAL INFORMATION CENTER!

The post office in Fombell is about a mile away from Hereford Manor Lake. Dave Benn, Postmaster, gets many phone calls during a routine day. Most of the calls are similar in nature such as: "Is my check in the box?" "Did I receive a package from my sister in California yet?" Last winter, a man really came up with an original "Is there any ice on the lake?"

Don Parrish
Waterways Patrolman
Beaver County



The temptation to put a boat away as quickly and effortlessly as possible results in an improper lay-up.

Ashore & Afloat

by Gene Winters

As the first shadows of fall spread silently across the land, it is the call to a very unusual summer for many boaters. More weekends and vacation weeks were ruined by incessant rainfall or scorching, sweltering sunfall than my memory recalls in many a year. All of which prompts many boaters to hold on to a ray of hope that Indian Summer this fall will be especially long and dry.

But I realize, regardless of what the weather will hold, many boats will shortly be pulled — if, indeed, they have not already — to be placed in their winter's cocoon. It is for such persons particularly that this month's column is penned.

It is always tempting to put the boat away as quickly and effortlessly as possible. I've always felt this is so for two conflicting reasons: folks are just plain "played out," clashing with the remorse that it's "all over for another season." In any case, the result is often an improper lay-up or winterizing. This means, at best, getting a late start next spring; at worst, a ruined engine

or a boat that may be unseaworthy. Aside from time factors, this day and age the additional financial costs involved are no small thing. It doesn't really matter whether you do the work yourself or pay someone to do it, *it's important that you, the owner, ensure it's been done right.*

It would be nice to believe you could put unqualified trust in anyone who hangs out a marine dealer or mechanic's shingle. But, like in most walks of life, it doesn't always work out that way. A good winter lay-up is a good investment. A bad lay-up is about as good as none at all.

How do you properly winterize an inboard engine? An outboard? A sterndrive? How do you lay up a marine toilet? A galley? Electronic equipment? A wood hull? A fiberglass hull? Actually, *complete* answers are beyond the scope of this article. Little purpose would be served by repeating here information that is already widely available (but, alas, sometimes ignored). Boating books and magazines abound with do-it-yourself articles and pages of wisdom. But maybe if we can create a "mood" in this column, there are some who might be tempted to at least investigate.

Even if you never even add oil to your inboard but have the marina do it, even if you've never taken the cover off your outboard to see what's inside, you should have some idea what it's all about. That starts with reading and acquiring some basic knowledge that's yours free — just from reading the instruction book or owner's manual that came with the purchase. It

wouldn't hurt, even for those not too mechanically inclined, to secure the factory service manuals, usually available at modest price. If you elect to do your own winterizing, they're almost a necessity. If you pay someone to do the job, it may give you an idea whether you're getting the job done right. Plus any extra information you gather may be useful in troubleshooting next summer if you break down on the water. Don't automatically assume, however, that a good mechanic must necessarily follow every step or sequence in the manuals. There may have been changes in service techniques since your manual was printed or a sharp, experienced dealer may have learned some really valuable tricks-of-the-trade that even the factory hasn't picked up yet. If you have some questions, ask. But be polite and inquisitive, not demanding and tactless. As my daddy used to say, you attract more bees with honey than with vinegar (or something like that).

As mentioned earlier, additional knowledge can often be culled from the pages of national boating magazines. Most of these articles are quite good and very detailed. A few, however, are carelessly researched or hastily rewritten from someone's sales brochure and may not be completely accurate, at least technically.

Be especially careful with do-it-yourself articles that seem unusual or different. While they may be fine many times a "bug" or two creeps into them and even a skilled and trained editor may be at a loss to uncover them. I often, particularly with

articles on electronic or electrical projects, like to hold off about three months before following the author's teaching. In the meantime, I scan the subsequent issues of the magazine looking for the editor's corrections or those of a sharp reader, calling attention to an error in the *Letter to the Editor* column. Picking the good from the bad comes about from reading and more reading, talking to dealers and mechanics, keeping your eyes and ears open when around other owners and in the boatyards. Even then, there will still be areas of disagreement.

Take permanent, built-in gas tanks at winter storage time. Should they be filled or stored empty? Does it make a difference if the boat is stored outdoors or indoors? Some dealers say store 'em full; others say empty. Some never answer one way or the other, simply shrug their shoulders and walk away. Call up five insurance companies and they may be just as evasive. The most positive answer I ever got from them was, "Do whatever the dealer recommends."

How about marine toilets? Every article I've ever read said "... pump some antifreeze through it, then leave a little in the bowl." Good advice? Apparently not always. We were looking at another boat this summer and I happened to catch a caution note hidden almost out of sight behind the

head. *Caution, it read, do NOT use or pour any antifreeze in this unit. Simply remove the two plastic plugs as shown in the owner's manual.*

You know about adding antifreeze to the freshwater tank and sink drains, don't you? Do you know what *kind* of antifreeze? Better learn before you poison somebody.

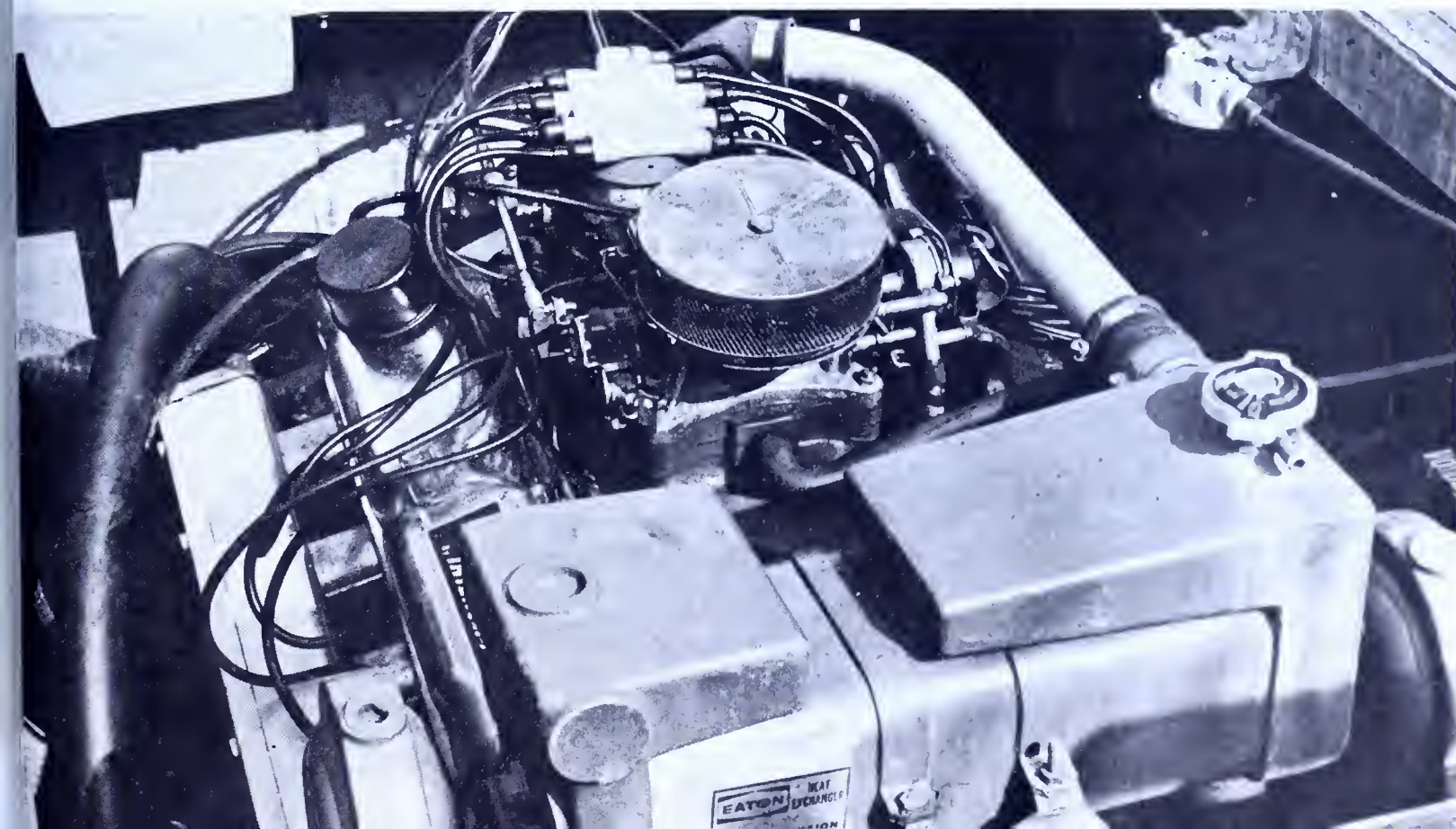
You should change engine oil before storage, right? Or is it *after* winter storage? Or maybe it's both *before and after* winter storage? Now you're getting into chemical and scientific areas. What's the best source of the right thing to do? I'd start with the engine manufacturer. What does he recommend? Better follow his advise, especially if you'd still like him to honor a warranty. If you can't get info from him, turn to one of the oil companies. Or play it safe and change it before and after winter storage. Ten or twelve quarts of oil is a heck of a lot cheaper than an engine overhaul.

What about batteries? Here you can really get some great advice, like, a fully charged battery will not freeze. True, but *you* may freeze trying to keep the battery fully charged! Most will only hold a full charge, unused, for about a month. The solution? Bring it home. Or is it? Now you've got to keep it charged. How? Maybe a trickle charger. (Maybe the battery manufacturer will void that warranty, too, if he

finds out you've left a trickle charger on it. Better check it out.) About once a month charging in lieu of a trickle charger should do it, right? Maybe. Except how long do you charge it once a month? Now you get into electrical terms like amperes and other logic. Maybe the easiest thing is to take it to the local service station for a monthly charge. But what do you want... a short, high charge... a medium charge, or a slow charge? Soon you may even have to find an article on hydrometers.

I could go on and on. After all the years of watching the experts (and talking their heads off), learning by experience, reading everything I could get my hands on, I still slip up now and then. But I've reduced the chances of major problems and a lot of annoying small problems each spring by just having some idea of what's going on. I know I sleep better at night during the long, cold winter knowing things have been taken care of properly. You will, too, if you really get involved in *all* aspects of boating. I never promised there'd be no work involved, I only promised there'd be a lot of fun. Besides, it's bad enough worrying all summer long about thunderstorms, squalls, tornadoes, thieves, mischief, and what have you. Who wants to worry about their boat all winter long?

Your power plant represents a considerable investment and it doesn't really matter whether you do the work yourself or pay someone to do it, it's important that you, the owner, ensure it's been done right.



THE ANGLER'S NOTEBOOK

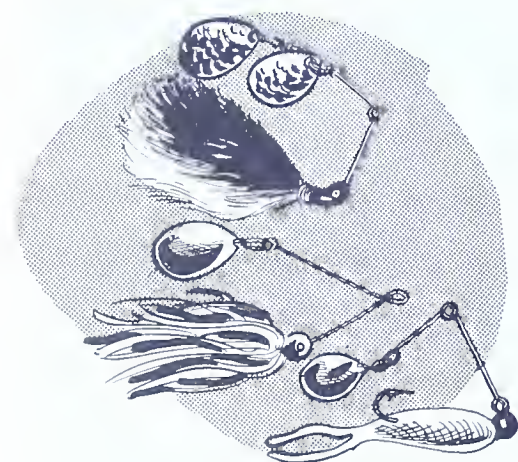
by Richard F. Williamson

FISH FACT: Bass have soft throats. So, a baited hook, taken deep by the fish, will result in fatal injury if the hook is roughly removed and the soft tissue torn. It is better to cut the leader close to the hook and let the hook in the fish. Natural body juices will dissolve the hook, and the fish will survive.

Lures or baits trolled for walleyes must move very, very slowly through the water or the fish will ignore them. Rather than use even an electric motor, the walleye angler can take fish by trolling behind a rowboat. He will be moving fast enough. The walleye will not chase a lure or bait through the water but will be very interested in one that lazily swims and bumps along on, or near, the bottom.

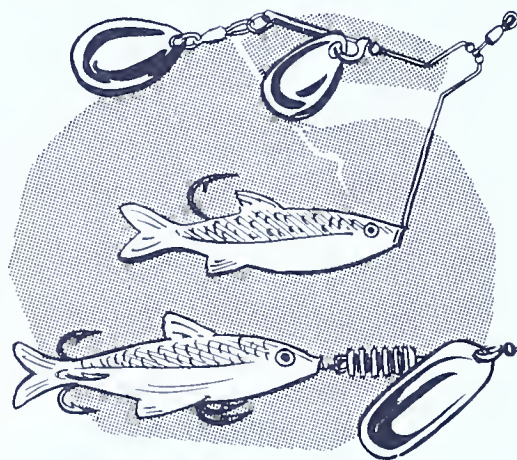
Try new patterns; but, don't desert the old faithfuls that have been taking trout and bass for generations. They still are effective.

Go slow on the trigger when a bobber you are using in bait fishing gives convulsive jerks and twitches on the water surface. A fish is just nibbling or teasing the bait. When the bobber goes under, stays under, and starts moving away, the fish has the bait in its mouth. *Then* is the time to set the hook; but, first reel in any slack line so you get a direct pull on the hook.



Spinner baits that have one or two blades mounted on wire atop the jig-type lures are excellent for bass and pike fishing. They produce more flash and heavier vibrations than spoons do and they attract more attention than plain jigs. They are dressed with hair, rubber legs, or plastic bodies that look like grubs.

Artificial lures are often more effective than live baits for one simple reason: the user of artificials must keep his lures moving through a lot of water, so they are seen by more fish than would be attracted to a live bait that keeps a fairly stationary position in the water.



Rubber minnows are good lures for big fish but they are not effective in themselves. The flash that attracts the fish comes from a spinner bait (top) or a single-blade spinner (bottom). They are available in a good range of sizes and will take trout, bass, pike, pickerel and even muskies.

A piece of red cellophane is a handy gadget for the fisherman. He can use it to cover the lens of a flashlight while he picks up nervous night crawlers in the grass or tinkers with his tackle in a boat or along the shore at night. The 'crawlers and the fish will not be disturbed by the faint glow of red light.

Water temperature is not as critical in bass streams as it is in lakes. Streams are more shallow than lakes so the water temperature does not vary many degrees from top to bottom, except in very deep pools. Fish find the same degree of comfort at all levels in water of average depth.

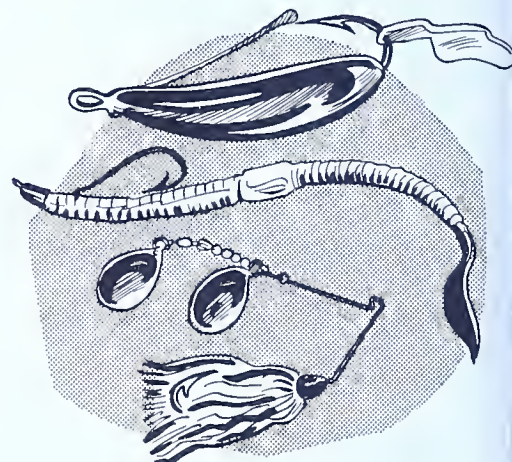
A delicate, midget fly rod is no tool for fishing surface lures for bass. A rod that works well with a line in Size 6 to 8 is better. The midget rod and the line that matches it will not generate enough power to cast poppers and hair bugs which always are wind resistant, nor set a hook securely.

Short casts, where feasible, help the angler using monofilament line. Mono stretches and on long casts a striking fish may escape before the line is tightened enough to drive the hook into its jaw. Besides, it is easier to impart controlled action to a surface lure with a short line.

Very long steel traces at the end of casting lines are not necessary in fishing for pike and pickerel. A trace six inches long and of very light wire is sufficient. A short wire will also enable the angler to get more action out of his lure. A long, heavy wire acts like a drag on the lure.

Pay attention to your fishing methods. Every time you catch a fish, or perhaps just get a strike, follow the same pattern of float or retrieve on the next casts. This system avoids hit-or-miss fishing methods.

Fish have keen senses of smell and taste. Prick a night crawler with a hook in two or three places, or cut a shallow gash in the side of a minnow. The scent of the bait, indicating that it is injured, will be detected by any species of fish.



Three types of weedless lures are good for fishing lily pads and weeds. The silver minnow (top) usually with pork rind attached, rates high on the list. The weedless plastic worm (center), rigged Texas style, is also fine. The spinner bait (bottom), whose blades and dressing shield the hook, is the third favorite.

Midget lures cannot be cast properly or heavy lines and heavy lures put too much strain on very light lines. That is why the lure and line should be matched.

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*Day's end in a
Presque Isle lagoon*

PENNSYLVANIA

DECEMBER—1978

Angler

the
**Keystone State's
Official
FISHING·BOATING
Magazine...**

30¢

Single Copy



*Black
Moshannon
Lake in a
Christmas
setting*



On Taking a Stand —

As we ponder the results of the election and effects the new Administration will have indirectly and directly on the Fish Commission, we continue to be seriously concerned about the apathy of the American voter. Here in Pennsylvania, after a record number of investigations, indictments and convictions, one would think that the grass roots would rise in righteous indignation over bad government, and yet the turnout showed increasing apathy. This makes one wonder about the sense of priorities set by those who don't seem to care.

This preoccupation with small worlds is borne out by the protests of so many people against TV stations which interrupted the showing of "King Kong" for the announcements by the President of the United States that the Peace Accords had been signed at Camp David! It is borne out further by just perusing the newspapers and noticing the page after page of what I consider athletic trivia related to spectator sports, as opposed to participatory sports such as hunting and fishing which receive minimal coverage. Perhaps this is a blessing, as it does not tend to overadvertise the resources that outdoorsmen enjoy.

It seems that Americans in this generation react best to crises and many of the adversities described glaringly on the front pages of the newspapers just don't seem to be enough of a crisis to get people excited. For years the organized sportsmen had a reputation of being the front-line defense of fish and wildlife, and other natural resources, and wielded considerable clout on Capitol Hill.

We can only say that their job is tougher now and overcoming citizen apathy is a challenge that had better be met with fervor or we will all be the losers.

Ralph W. Abele
Executive Director

Pennsylvania Angler

Pennsylvania's Official Fishing & Boating Magazine

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ON THE COVERS

Staff Photographer Russell Gettig captured the spirit of the season on our covers this month. On the front cover, Black Moshannon Lake has an inviting Christmas look to it—it will be one of the early ice fishing hot spots to which anglers will soon flock.

BACK COVER

For the open water buff, there's always a Fish-For-Fun stream within easy driving distance for those who can't forsake the long rod.

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James F. Yoder, Editor

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EXPENSIVE PROPOSITION —

Enclosed is my remittance for another three years of great reading from the *Pennsylvania Angler*. I wish to take this opportunity to thank the Fish Commission for the excellent variety and high quality of fishing available in the Commonwealth of Pennsylvania. I am currently stationed with the United States Navy in Iceland. Although the streams and rivers abound with trout and salmon and are virtually virgin waters, getting access to them can be a difficult and expensive proposition. The whole angling situation here has made me appreciate more the fine fishing available in Pennsylvania. Needless to say, I am homesick and waiting patiently to dip a line in one of the many rivers and lakes of Pennsylvania. Thanks again for a job well done.

JOHN M. CHAMPION
USNS Keflavik, Iceland

COMMENT —

MR. RALPH W. ABELE,
EXECUTIVE DIRECTOR
PENNSYLVANIA FISH COMMISSION

Dear Mr. Abele:

Your editorial comments in the September, 1978 *Pennsylvania Angler* were frightening in the extreme. They show great misinformation, which is kinder than saying ignorance and stupidity.

The space program and proposals for space colonies are not "disgusting" nor a "travesty" to informed forward-looking people. Indeed, such programs are man's best and perhaps only hope for a decent quality of life in the future.

You mention the Surface Mining Act of 1976 and the lack of a national energy package. The space program offers the best hope for the basic research in clean energy and a place for the safe generation of such energy. There would be little problem with strip mining if atomic energy and/or solar energy could be cleanly and safely researched and generated in space.

Nor are the colonies proposed a mere waste of resources. After the initial start up, such colonies could produce many manufactured items cheaply that are both

expensive and polluting here on Earth. This does not take into account the basic pure research that could be carried on.

Sociologically speaking, the "safety valve" effect of having such colonies would be tremendous. There are no frontiers (in the real sense) on Earth anymore. Space could provide one and the human race needs it.

Space has already provided many benefits. Weather forecasting, crop observations and geological observations are valuable now, and could be more so with continuously manned observation platforms. Pacemakers and long distance medical monitoring are just two other benefits we already have.

That professor with his "outlandish" proposals and his "madcap" technologies is sincerely and realistically trying to do something to "save the Good Earth." If he loses out because of you and other dedicated "knownothings," then the human race has nothing to look forward to but continuing to drown—both physically and psychologically—in our own waste products.

Sincerely,

DAVID L. TRAVIS
Associate Professor Of Mathematics
Glassboro State College
Glassboro, N.J.

"TRADITIONAL . . ."

I have enclosed a check for another three years of *Pennsylvania Angler*. Since it appears traditional to use the renewal as an opportunity to send a letter as well; here is mine.

Although I feel that fishing for stocked fish in an artificial lake is closer to netting trout in a barrel than it is to angling sport, you do an excellent job in giving the fishing public what it wants.

My current complaint concerns the monthly feature "Bait Up." As long as I have fished, I have made use of any bait at hand at my fishing spot. The angler who does this not only can catch more fish; he can observe dramas seldom seen by those concerned only with things too large to go unnoticed. Natural wonders and miracles of life abound in the realm of tiny creatures and many a slow day at the river was saved by the emergence of a butterfly or the nesting activities of a parasitic wasp. Therefore, I was delighted when the first of the series appeared and enjoy them very much. I must, however, take issue with Don Kingery in view of his September column.

The endangered species list has insect members as well as mammals and birds. With pesticide use and increasing high-

ways several butterflies are in serious trouble. One thing these beautiful living jewels do not need is a herd of heavy-handed fishermen beating the bushes with nets c skewering them on hooks.

I am not arguing against the use of an insect bait, or even only all butterflies and moths. I only wish that those anglers who wish to gather their own bait take the time to find out which are the rare species and how to identify them in larval, pupa, and adult stages. It would be nice to know that these delicate, colorful treasures will continue to embellish a world made increasingly civilization gray.

WILLIAM L. LEITZE
Connellsville

P.S. I have glanced through Mr. Kingery's previous articles and notice no caution against using endangered fish, amphibians, arthropods, annelids or whatever. If he issued such a caution, I apologize to him as I do to you for my atrocious spelling.

Unquestionably, you have a valid point. However, although each of us would have a natural inclination to further the protection of a wildlife favorite (apparently the butterfly is one of yours), and would be well-informed with regard to the identification of the rarer species, most of us are relatively ignorant outside of what might be a narrow corridor of preference and expertise. We agree with you that none of us—including "heavy-handed fishermen"—should further the elimination of the rare and endangered. The Pennsylvania Fish Commission, through news releases to the media, has attempted to apprise the public of the status of the Commonwealth's endangered fish, reptiles and amphibians—those creatures within its purview. For this reason Mr. Kingery undoubtedly felt it was each angler's personal responsibility to select his bait with some discretion.

While we've got Mr. Kingery on the block we'd like to thank him for his series which ends with this issue. It has served our readers well. Many have written to us expressing their appreciation for many of his "hints"—some of which might have seemed to be "old hat" to experienced fishermen but newcomers to the sport found enlightening.

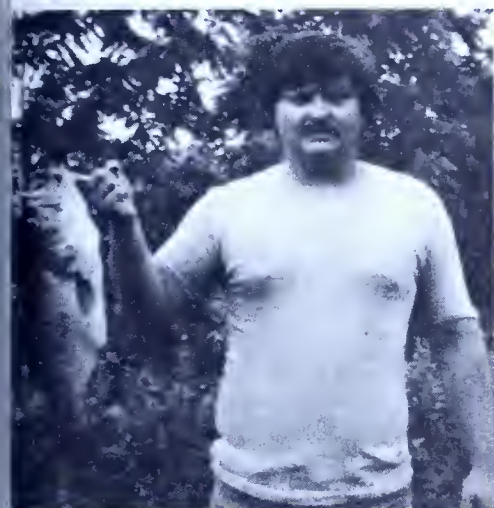
And, we thank you, too, for sharing the plight of the butterflies with us. Perhaps the printing of your letter will alert our readers to be more selective when gathering natural baits. Ed.

"FANTASTIC"

I would like to compliment Mr. Russell Gettig for the photography on the front cover of the September issue of the

Angler. That is a fantastic photograph. Well, keep up the great work. Better fishing to you!

ERIC GARNER
Allentown



PRIZE —

My father and I are both avid fans of the *Pennsylvania Angler*. I would like to submit this picture of my prize bass. I caught it at Lake Arthur in Butler County. It is 21½ inches long. I caught it on my favorite plug, the black surface jitterbug, at 2 o'clock in the morning. It sure pays to stay awake.

TERRY BARTGES
North Versailles

NONE LIKE THE SMALLMOUTH!

Please renew my subscription for three years. I've lived in Florida for the past three years and have been enjoying Florida bass fishing since I left Pennsylvania.

I've landed a few 5-pounders and missed a few I'm sure were 10 pounds or over but Florida largemouth bass don't fight like Susquehanna smallmouth. Pound-for-pound, smallmouth bass still remains the best fighter in fresh water.

Looking forward to fishing in the warm-water discharge at Brunners Island (York County) over Christmas vacation.

BILL NAILOR
Orlando, Florida

SMART FISH?

Just a few lines to say that after receiving the *Angler* for one year I at last decided to get a license and fish. Your magazine inspired me to give it a try and a big "Thank You," because I love it. Your magazine lets me dream of a big one because, to tell the truth, about all I can catch are bluegills.

One question I would like to have an

answer to is are rubber worms much good? After trying them time and again I swear the fish must have thought I was crazy to try and fool them.

MRS. JACKIE SNYDER
Quakertown

"Rubber" worms, so called although they are actually a plastic and not really rubber, have proved to be a highly effective bass lure. The trick seems to be in learning to use them properly — it's all in the retrieve. Unlike live worms which can be cast out, let settle to the bottom and still catch fish, the artificials must be retrieved in slow twitches to impart some lifelike action to them. That's an oversimplification because, although even a newcomer to their use will attract strikes with less than perfect technique, once you've tempted the bass into taking the worm, hooking them is another matter. Even among successful artificial worm fishermen there is still considerable disagreement whether the hook should be set immediately or after the fish "runs" with the lure. Thus, although these "rubber" worms have been around for quite a while now, we still have some folks swearing by them; others swearing at them! Ed.

PLEASED —

I want to thank the Fish Commission for the wonderful job they are doing in this wonderful state of Pennsylvania, and also to the staff and officers who help us have such good fishing. I think we are getting our streams and other bodies of water clean of pollution, which is wonderful. But, we need everybody's cooperation. The money I spend for a fishing license provides the best enjoyment I ever had. Keep up the good work.

CHARLES E. BAUBLITZ
York

"EASY TO UNDERSTAND" — FISHING IS EASY ...

A little over a year ago, I subscribed to the *Angler*, and I am very surprised how much it has improved my fishing skills. It is very easy to understand and it gives information on catching all Pennsylvania fish from panfish to gamefish like muskellunge. Fishing rivers and lakes in Pennsylvania is easy with the *Angler*.

SEAN ELLERMAYER (age 14)
New Kensington

"MEAT WAS SCARCE ..."

Just read the September 1978 issue, the article about "Eel Fishing." My father

used to spear eels from the Susquehanna River at night. He made a homemade torch, nailed it on the boat. Then my brother and I pushed the boat over the riff's (shallow water) as my father speared the eels. We carried the eels to our farm home in a washtub. My mother fried the eels. Our family enjoyed eating the eels as meat was scarce sixty years ago. Our farm bordered on the Susquehanna River.

BERNICE KERR
Largo, Florida

In one of our 1979 issues veteran writer Ted Fenstermacher is going to share with us an account of the eel "fishing" done along the Susquehanna River in days gone by — "stay tuned"! Ed.

REFRESHER COURSE —

Many cheers for Chief Graff's reply to Mr. Buffington in the August issue. Not because it was a reply to Mr. Buffington, but, rather that the chief's letter contained a "refresher course" in so many areas pertaining to what makes fishing in Pennsylvania so good.

V. P. REED
Allentown

MOVING?

Send us both your
old and new addresses
with both zipcodes.

TO EACH HIS OWN —

I like your magazine very much but don't agree with all I read. For example, in the August issue, the question was asked about free fishing license for senior citizens, "...\$10.00 or an optional \$2.00 a year."

I think the Fish Commission would make more money at \$10.00 for a lifetime license but how many people would live to be 71 years old and enjoy a free license for only one year?

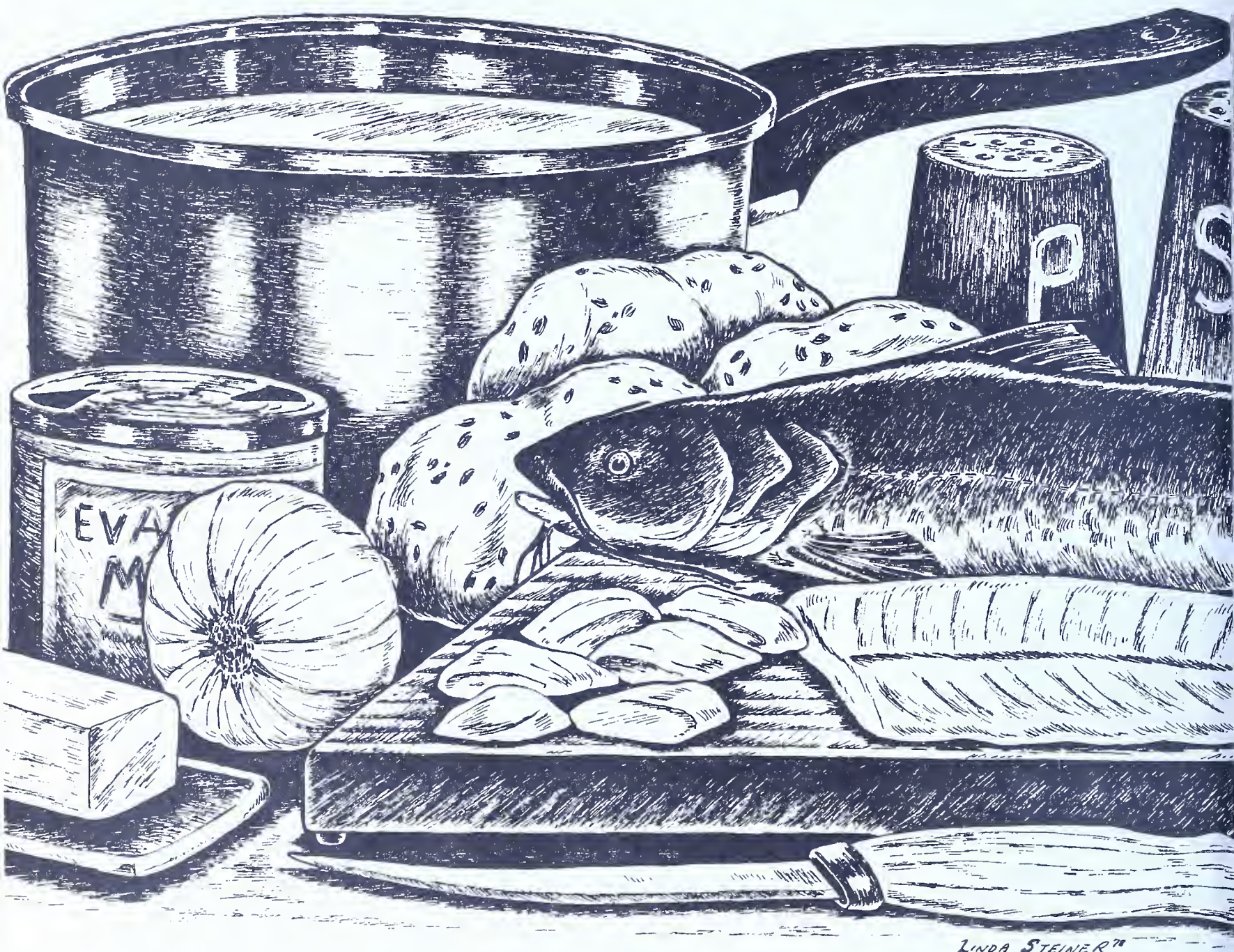
I am 67 and I'll take the \$2.00 license anytime. It is my opinion older people would profit more with the \$2.00 license.

Keep printing the good stuff and forget about the not so good!

CLYDE W. SOWERS
Grove City

"Make more money..."? Shucks, Clyde, we're not trying to make money — we're merely trying to provide a service and providing a service costs money. The key word is "option" — you've expressed your preference, others might have a different outlook. Ed.

Hot Chow(der) for cold winter days —



*A Prouder Chowder
&
A Super Soup*

MEALS from the CREEL

by Arthur J. Michaels

Two hundred years ago, a French writer on gastronomy wrote, "A rich soup and a fish is a dinner for a king." And even though his France had *Bouillabaisse*, Italy had *cacciucco*, Russia had *selyanka*, and Spain had *zurzuella de pescado*, little did he know that throughout New England at the same time, colonists were serving up their own fish chowders.

While Europeans fancied their fish

oups and stews, those tidewater colonists prepared fish chowders out of necessity — not frill. In New England, at the time, you were either a farmer or a fisherman, with few exceptions. After a long tiring day of fishing or farming, your appetite was enormous. You wanted hot, hearty and nourishing food. So, chowders were born, made with several kinds of fish and shellfish, potatoes, corn, milk, onions and spices — food that was readily available. For good reason, the word, chowder, comes from a French word meaning cauldron: *chaudiere*.

Those colonists were not big on elaborate preparations of their meals, either. Their cauldron cooking provided them with fast breakfasts, lunches and dinners.

Today, the advantages of preparing and serving fish chowders are the same as they were two hundred years ago. For the most part, chowders are easy to prepare and they provide good nutrition as a meal-in-a-bowl. A large serving of a piping hot and hearty fish chowder loaded with chunks of fish and vegetables can satisfy the biggest appetite and warm you on a cold wintry day. In addition, fish chowders, soups, and stews are perfect for pleasing a large group of holiday friends and relatives.

An authentic fish chowder has two main features. First, to create your meal-in-a-bowl, use several different kinds of vegetables of different colors to insure proper nutrition and add to aesthetic appeal. Second, use fish and vegetables that are immediately available, like the New England colonists did.

To begin, consult the soup and chowder recipes in your *Pennsylvania Anglers Cookbook* on pages 125-133. Available for \$2.50 from the Pennsylvania Fish Commission, P.O. Box 673, Harrisburg, Pa. 17120. Checks or money orders, please.) Then warm up the holidays with these chunky chowders and soups:

NEW ENGLAND CLAM CHOWDER

Chowder is as American as apple pie. By definition, a chowder is a rich soup containing several different kinds of fish and shellfish. In reverence of those tidewater colonists, here is New England's favorite.

One 7-³/₄ ounce can minced clams

2 large potatoes
1 medium onion, chopped
2 slices bacon, chopped
12 ounces milk
8 ounces heavy cream
1 cup water
salt and pepper

Wash and rinse the clams well. Place the water and clams in a large saucepan and bring to boiling. Peel the potatoes, cut them into small chunks, and put them in the saucepan. Add the bacon, salt and pepper to taste, and milk and cream. Simmer over a low flame for 30 minutes. Bring to boil before serving. Serves 4-5.

MANHATTAN CLAM CHOWDER

If you traveled southwest from the New England colonies, as you neared the New York area tomatoes would be added to your chowder. South and west of New York, where tomatoes were readily available, this chowder received smiles. However, north and east of New York, this version received frowns.

Two 7-³/₄ ounce cans minced clams
4 slices bacon, chopped
3 medium onions, chopped
1 cup green peppers, chopped
1 cup celery, diced
2 cups water
16 ounces clam juice, bottled
1 (20 ounce) can tomatoes
2 large potatoes, peeled and diced
¹/₂ teaspoon thyme
1 tablespoon cornstarch
2 tablespoons water
salt and pepper

Wash and drain the clams, saving the liquid. Cook the bacon in a large saucepan or kettle and add the onions, peppers, and celery. Cook and stir often for 10 minutes. Add the water, clam juices (reserved and bottled), and tomatoes. Cook for 10 more minutes over low heat, stirring often. Add the clams, potatoes, and thyme, and cook for 25 more minutes. Mix cornstarch with cold water, and add to chowder, thickening to taste. Add salt and pepper to taste. Serves 10-12

FRENCH BOUILLABAISSE

Technically speaking, a soup, like this French *Bouillabaisse*, is any food prepared as a liquid.

3¹/₂ pounds whole fish, any kind
1 cup chopped onion
¹/₂ stick butter or margarine

1 small can tomatoes
1 clove garlic, minced
1 bay leaf
12 clams, in shell
1 small can shrimp
2 cloves
2 ounces cooking sherry
1 tablespoon Worcestershire sauce
salt and pepper

Scale, gut, and fillet the fish, but keep the heads, skins, and bones. Boil fish parts in about four cups water for 20 minutes, and strain. Fry the onions and garlic in a large pan, then brown the fish fillets. Add everything to the strained fish stock and cook over low heat for 20 minutes.

CATFISH STEW

A stew is like a soup and a chowder, except that it contains more solid ingredients.

1 pound catfish fillets
3 large potatoes
1 medium onion
1 can evaporated milk
¹/₂ stick butter
salt and pepper

Cut the fillets, potatoes, and onion into one-inch chunks. Put them in a large saucepan, cover with water, and boil until the potatoes are soft. Add the milk and butter, and bring to boiling. Add salt and pepper to taste.

TUNA CHOWDER

Make believe you're a hurried and harried tidewater colonist with this chowder and whip it up in about 20 minutes.

1 cup chopped onion
6 tablespoons butter
6 tablespoons flour
6 cups milk
1 teaspoon salt
2 teaspoons soy sauce
8 slices American cheese
2 cans tuna, drained
2 cans peas, drained

Fry the chopped onion in butter in a large saucepan, and stir in the flour. Cook for 10 minutes. Stir in the milk and soy sauce, and let this sauce thicken and boil for 1 minute. Stir in other ingredients. Serve piping hot. Serves 8.

You can add protein to any meal-in-a-bowl by adding chopped hard-boiled eggs. Serve these soups with a beverage and a whole-grain bread.

Bait Up

by Don Kingery

illustrated by

Ray Piccolin

This section contains specific information on the types of *natural* flies most commonly used by anglers but all flies make excellent bait. They can be utilized in the larval, pupal, or adult stage of development. Covered, too, will be the use of some aquatic beetles and some mammals.

AQUATIC FLIES

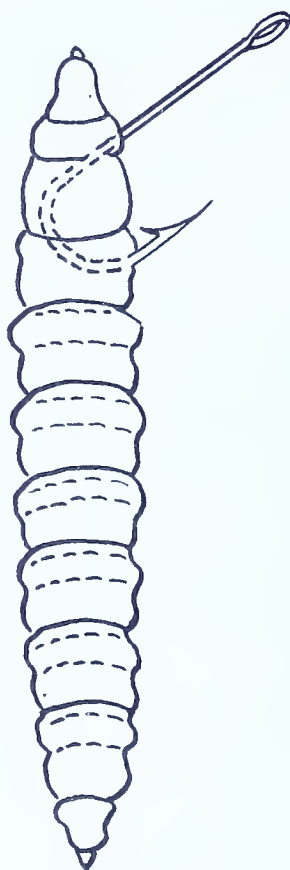
Crane Flies

Crane flies are long-legged, fragile insects which resemble giant mosquitoes. They are often seen flying about on summer evenings and are frequently attracted to artificial lights. In those species with an aquatic larval stage, mating occurs in flight, the female then flies over a stream, dipping the tip of her abdomen into the water to deposit the eggs. Most species have only one generation per year.

Tipula (crane fly) larvae are semi-transparent, grublike insects. They range in color from brown to whitish and are generally recognized by their spiracular (breathing) disk which is located at the posterior end of the animal. The larger larvae, commonly known as "waterworms," reach a length of over three inches and are one of the best baits available for ice fishing.

These scavengers pass the entire winter in the larval stage and are most often found in small swift streams. They are easily collected in shallow, fast riffles by turning over flat rocks while holding a sieve or fine screen directly downstream. In a good stream, you should be able to gather fifty in less than half an hour. Those you don't use immediately should be kept refrigerated (35° to 40°F) in a jar of water. *Tipula* larvae are easily kept in an aquarium; just be sure to keep it cold, well oxygenated, and provide lots of organic vegetation (dead leaves, etc.) for them to eat.

Hook *Tipula* larvae through the head, or lightly under the tough skin, and fish them just off the bottom. If you hook them too deeply, these insects seem to collapse and the body fluids ooze away leaving you with nothing but a limp skin. Jigging *Tipulas* through the ice is an excellent method of taking trout and panfish during the winter season.



GALL WORMS

Gall worms, so popular with ice anglers, are actually the larvae of a fly known scientifically as *Eurosta solidaginus*. These flies parasitize goldenrod, laying an egg inside the stem and causing a bulbous swelling to occur. The galls are hard on the outside but have a soft pithy inside with the larvae lying in the exact center. The galls can be gathered in late fall or winter and will keep for the duration of the cold season without any special attention. Simply store them outside in a plastic bag. When gathering galls, pass up any that have holes in them. This is a sign that the larvae has either been parasitized by another insect or dug out and eaten by a bird.

Take a pocketful and then split the galls as you need them, placing the larvae on small hooks. Fished like maggots or jigged through the ice, these larvae are very good panfish producers.

MEALWORMS

Mealworms, commonly sold in pet stores as food for lizards and birds, are considered a pest in flour mills and grain storage areas. They are the larvae of beetles commonly known as hardbacks and are excellent panfish and trout bait — summer or winter. Hook them lengthwise through the body, they stay on the hook better, and jig them through the ice. In the warmer months they can be drifted on a bobber or fished on the bottom.

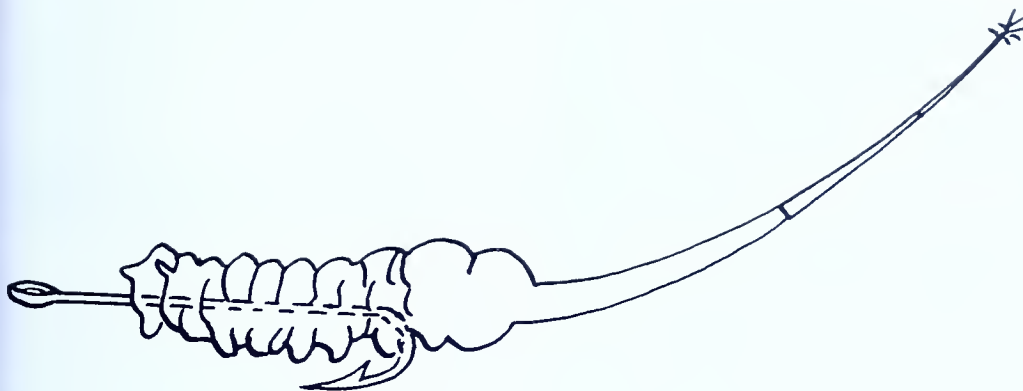
Buy a large initial stock (500 to 1000) from a local bait dealer, pet store, or through the mail from a bait farmer, and you will never have to buy another. Simply put your unused larvae in a jar with three inches of bran, oatmeal, cornmeal, or other grain. Cover the top with cloth and sprinkle water in the jar every couple of days, or put in an apple to maintain humidity. The larvae like it dark, so put your colony in a corner or cupboard where they won't be disturbed, and keep them warm. Cold will retard and slow down their growth. Add more grain as it is needed, and don't worry about cleaning out the jar. Mealworms are one of the cleanest insects to raise, and the container will not need to be cleaned for two or three years.

Within six months you should have a sizable colony of second generation larvae. Collect your bait by scooping out both grain and larvae, picking out the larvae and returning the grain to the jar (it probably contains eggs and minute larvae). Once your colony is well-established, use both pupae and larvae for bait; but at first, leave the pupae to mature into adult beetles to insure plenty of breeding stock.

MOUSIES

The mousies, or rat-tailed maggots, are the larvae of the hover flies. The adults are brightly colored, harmless insects that feed on pollen or nectar and are often seen hovering in sunny areas near flowers. The larvae of most species are terrestrial, others are semi-aquatic, living in damp logs and water-filled holes in trees and stumps. The truly aquatic species live and feed under water but breathe air through the long "tail" which is actually a respiratory tube.

They will be found in shallow water,



feeding on decaying organic matter. Mousies can be purchased at larger bait stores, and are a popular ice fishing bait. They will keep well in the refrigerator and should be fished like maggots.

HORSEFLIES

There are over three hundred species of horseflies in the United States and although most spend their larval stage in damp earth some are truly aquatic. The eggs are laid in masses on plants and sticks just above the surface of the water, the larvae dropping into the water after they hatch. The larvae are cylindrical, tapering at both ends, and vary in color from cream through yellowish and greenish to drab brown. They attain a length of up to 1½ inches and will either be scavengers or predators depending on the species. Some spend up to three years in the larval stage.

Collect them year-round by scooping along the muddy shallows of still ponds and swamps with a sieve. Fish them as you would crane fly larvae and store them in water-filled jars in the refrigerator or in an aquarium. The adult females of some species bite severely. But when caught, impaled on a hook and fished on or just below the surface, will produce many strikes by panfish.

TERRESTRIAL FLIES

Maggots

Maggots, the larval stage of flies, including the blowflies, houseflies, greenbottle and bluebottle flies, are excellent panfish and trout bait. They will be found feeding on garbage and dead, decaying animals. Take a jar and a deep breath!), turn over an old

road-killed carcass or whatever else they are feeding on, and scoop up a jarful. Cap the jar tightly as the odor is often very bad. String several maggots on a hook, completely covering it, or use just one on a small hook. Fish them on the bottom or on a small bobber and any panfish in the area will soon be in your creel.



When you're through fishing, throw the unused maggots to the fish. If you want to save them, hide them in a jar in the back of the refrigerator, and don't tell your wife what they are! What she doesn't know won't hurt you. To help kill the odor, put about a half inch of oatmeal or cornmeal in the jar with the maggots. Flies can be raised year-round. All you have to do is provide garbage and a heated area for them to live in, and they'll do the rest. A nylon covered cage in a heated garage works well.

In the summer, simply hang a dead animal a few feet off the ground and place a tray full of cornmeal or sawdust below it to catch the maggots as they fall. Don't locate them too close to your (or your neighbor's) house because unless the area is well-ventilated, the odor may become objectionable at times.

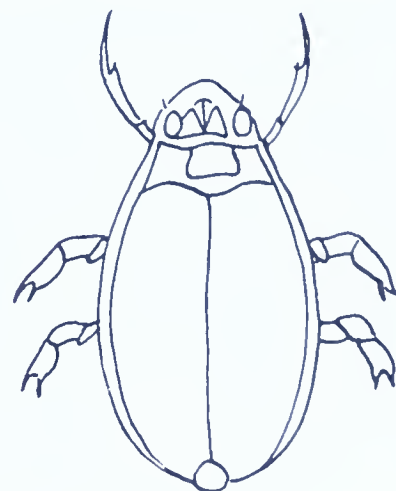
Adult flies and pupae are also good panfish and trout bait. Use a fly rod and drift them on the surface or fish them under water around brush piles.

The larvae of most aquatic beetles are too small to use as bait; however, those of the whirligig beetles (*Gyrinidae*), some of the predaceous diving beetles (*Dytiscidae*), and water scavenger beetles (*Hydrophilidae*) are large enough to warrant our attention.

Adult whirligig beetles hibernate during the winter, emerging to lay eggs in the spring. The larvae are mature by early and midsummer, and are best caught at this time. By the end of summer they will have pupated, emerging as adults about thirty days later. The larvae are all carnivorous, feeding on everything they can catch, and although fairly strong swimmers, will most often be found crawling about on submerged vegetation in quiet areas of streams or near the shore.

The larvae of the larger *Hydrophilidae* must also be collected in early and midsummer as they mature rapidly, some species having two generations per year. They are found in nearly all aquatic habitats but show a preference for quiet, slow moving waters.

The larvae of the predaceous diving beetles, also known as water tigers because of their voracious appetites, will eat both living and dead animals of all sizes up to and including fish fry. For this reason they are considered a pest in fish hatcheries. Only one generation is produced each year and, depending on how late in spring the eggs were laid, the insect will overwinter in either the larval or adult stage. *Dytiscidae* favor protected inlets, pools and ponds with lots of aquatic vegetation, shunning both rapid water and muddy bottoms.



(continued on page 32.)

Who would have believed it possible?

Serendipity at Lake Raystown

Tailrace fishing second to none!

by Wes Bower
photos by the author

The old adage that no matter what effort is undertaken, things don't always work out as hoped for, or planned, is especially true for fishermen. Fortunately, as a group they realize this axiom and accept it as a fact of life. But, fortunately for the trout fishermen in Raystown Country, this lake's coldwater fishery didn't turn out as planned and expected—*it turned out even better!*

During the late 1960's and early 1970's, when the Raystown Lake project was still in its infancy, there was plenty of enthusiasm and confidence that this immense water area would develop into one of Pennsylvania's real fishing hot spots. All indications pointed to the warmwater species being king. With 30 miles of old river channel, 110 miles of shoreline, and 8,300 acres of high quality water, the potential was definitely there. A planned accelerated warmwater stocking program, coupled with certain natural reproduction was bound to produce a warmwater fishing mecca.

Finally, the lake was filled. Within the next two years Lake Raystown received over 22 million fry and fingerlings of the following warmwater species: largemouth bass, muskellunge, northern pike, striped bass, walleyes, and tiger muskellunge. There was little doubt that a successful warmwater fishery would now be assured.

In 1974, when fishery biologists began to run water chemistry tests at Raystown, a surprising determination was made. The biologists determined that there was a definite possibility that the lower water levels contained temperatures which would support the coldwater species. More importantly, there was ample dissolved oxygen to sustain these fish. There was now strong evidence that the upper story of

Raystown would hold the warmwater fish and the lower water depths could support trout and other cold water species.

With the available biological information, and with fingers crossed, the Pennsylvania Fish Commission undertook a trout stocking program in Raystown Lake. 14,000 brown trout fingerlings were planted in 1975. The Commission then sat back, waited, and watched.



Bob Hoenstine holds a morning's catch of Raystown tailrace trout. You can catch them too!

Two years slowly passed with rather disappointing results. Raystown fishermen were unable to establish an effective pattern that would consistently catch trout in the lake. Some anglers tried lead-core lines, fishing at

70 to 80 feet. Their success was minimal at the best. However, enough fish were caught to prove that the trout were surviving and growing very well. Unfortunately the rather sparse catches still caused some doubt as to the total success of the program.

Then the unexpected started to happen. During the fall and winter of 1977 high water resulted in a series of heavy discharges from the large tainter gates which control the water fluctuation in the lake. Tailrace fishermen suddenly started to catch trout. Large brown trout with small heads, heavy bodies, and native-like coloration indicated that the future was beginning to look promising for the trout fishermen.

The opening day of trout season 1978 found hundreds of trout fishermen lining the tailrace of Raystown Lake. The fish were there, no question about that. Tales of large browns breaking off, some being caught and released during the pre-season, were being whispered about by local anglers. The word was out on Lake Raystown Tailrace fishing. A heavy catch on opening day dispelled any rumors. The trout were there and that was now a fact!

Initially, Lake Raystown's tailrace fishing attracted all types of anglers who tried a wide variety of rigs on the trout. It soon became apparent that the most effective bait was a creek chub—about three inches long. A unique hookup which worked for local fishermen was a #6 treble hook and a medium size split shot. Most tailrace enthusiasts found that an ultralight action rod wouldn't hold these trophies and they settled on a medium action outfit using an 8-pound-test line. Using this outfit, they fished the fastest water.

With this setup, several local an-

glers have done exceptionally well. These include Bob Hoenstine, Dick Hudy and Hudy's young son, Mike. Beginning with the opening day of the season, these three made infrequent trips to the tailrace, but still managed to catch over 70 brown trout—all over 18 inches! Young Mike Hudy came up with two Junior Angler Award trophies, both over 22 inches. Dick Hudy has entered one Senior Award trout over 24 inches. To further illustrate their success, one evening Dick Hudy and Bob Hoenstine netted seven trout on a fishing excursion—all of them were between 20 and 24 inches long.

I asked Jim Valentine, Huntingdon County Waterways Patrolman, to what he attributed the phenomenal tailrace trout fishery and he replied, "In the spring of 1977 we had a tremendous spawn of yellow perch in the lake. Millions of these fry congregated near the breast and spillway. The large trout which had concen-

Using creek chubs and a medium action outfit, Raystown angler Dick Hudy has enjoyed excellent results fishing the tailrace waters. Big brown trout are to be found here in abundance.

trated in that area, foraged on these perch fry and gorged themselves all summer long. When the tainter gates were opened in the fall to release water, over the spillway went some of the yellow perch and the big brown trout." Jim also added, "In my opinion this isn't all bad. The lake is acting like nursery waters and the tailrace fishermen are reaping the benefits. Raystown, you know, is an extremely deep lake with many of the steep banks dropping off into 100 or more feet of water. This makes trout fishing tough—even for the experts."

Although many anglers think of the spring months as being trout time, the extended trout season commencing this year will lengthen the fishing season for these coldwater fish up until the end of February. Fall and winter fishing for trout can really be productive since the lowering of water temperatures makes these Raystown trophies more active than in the temperatures usually found during the hot summer months. Remember, however, there is a reduced daily creel limit with no more than three trout



permitted in possession during the extended season.

A word of caution to those of you who may intend to try your luck at Raystown tailrace fishing: in the spring and winter months the water is very cold and swift. This is a much different ball game than wading in your favorite brook trout stream. Caution is a must, for falling in deep, fast water with waders on can have disastrous results. Hypothermia—or

the heat loss from the body in cold water results in several drownings every year. Even a fisherman in good physical condition has a life expectancy of but about 15 minutes in 33–44° water. Swimming or treading water causes the body to lose heat much faster than remaining still in the water. A life preserver should definitely be worn when fishing the tailrace in cold weather. Remember, **cold water kills.**



So far, the "best medicine" that Raystown Tailrace anglers have been able to find is a three-inch creek chub on a #6 treble hook. A medium size split shot helps hold the bait down in the tailrace's turbulent water.

An added bonus for those of you who may enjoy a float trip on tailrace water is the 5½-mile stretch of water immediately below the spillway to the confluence of the Juniata River. The Raystown branch does hold the huge brown trout and many have been caught along the entire length. A 17-foot canoe, with or without motor, or a 14-foot john boat will suit the purpose very well. Access ramps are available at the Corbin's Island Access Area below the spillway and the Point Access Area downstream about 5½ miles.

Just how good is this trout fishery? Since the recent population explosion, an on-going fishing contest held by a local newspaper had been inundated with entries of exceptionally large trout—most of which have been taken from the Raystown tailrace. Fish in the 6- to 7-pound class and 24 plus inches are there for the taking. Contest entries have verified this fact.

It is a well-known fact that fishermen are a persistent group and local dyed-in-the-wool anglers are not ready to throw in the towel and admit that trophy trout can't be caught with some degree of consistency within the lake. They are experimenting by fishing at different depths and changing their tactics as to time of day, as well as the time of year. It's a good bet that sometime in the near future that, with a little bit of know-how, excellent trout fishing will be enjoyed within the perimeter of Raystown Lake.

Will the Raystown Lake continue to produce such fantastic catches in the future? Local knowledgeable anglers believe so. With Raystown Lake serving as the "mother lode," and a sort of "population bank," the odds are in the fishermen's favor. Considering that after the initial stocking in 1975, of 55,400 brown, rainbow and lake trout were stocked in 1976. 1977 saw 162,000 of the same species, and 260,000 brown, rainbow and lake trout were stocked in 1978. These are impressive figures, but so to have been the results.

So, while the fishermen have accepted the fact that their fishing hopes and dreams don't always work out as they planned and hoped, they can take heart to the plight of the Raystown trout fishermen's dreams. For these anglers, "things didn't work out exactly as they planned, **they turned out even better!**"



Above: young Mike Hudy follows in Dad's "bootsteps" and fishes the Raystown Tailrace regularly. Right: Wes Bower, Jr., Katie Braun, Ed Mason and Christie McClain, young Raystown enthusiasts, lend a hand with the fish stocking chores.



Pennsylvania's Fishing School Program

by Richard Owens, Supervisor Southcentral Region

In 1965 a unique and informative fishing program was initiated in Pennsylvania. I recall attending a statewide law enforcement training conference in Bellefonte that year and one of the highlights of the conference was the original presentation of the "Fishing School" program by Paul Antolosky, Centre County Waterways Patrolman.

The program was based on the presentation of a course on the basic fundamentals of fishing which would enable the average angler, and the novice, to learn or further his knowledge of angling techniques. I remember sitting through that presentation and thinking to myself "Why didn't someone think of this before?" Here, being presented to us as Field Officers of the Fish Commission, were various aspects of fishing that we were *assuming* all of the fishing public already knew. What we were forgetting, of course, was that not all fishermen were acquainted with the basics of fishing to the same degree. Some people were simply better fishermen than others because they knew a little more of "what," "how" and "when" to do while fishing. It soon became apparent to many of us that this novel idea had the merits of becoming an important tool in overall Fish Commission educational program.

The first presentation, although not too refined, was very effective in getting the message across; it was, simply, "Let's teach interested people *how* to fish." The tools for this first presentation — flies and lures mounted on cardboard sheets, hand-drawn diagrams illustrating how to "read" the water, proper approach, hooks, leaders, lines, and so on, severely limited the viewing to a small, but receptive, audience.

The presentation was greeted with a genuine show of interest and enthusiasm and in the ensuing months the course was further refined by using a series of slides that made the presentation more visible to a larger audience. Subsequently, an intensive in-service training program was incorporated for the state officers, teaching, in com-

plete detail, how the course should be presented.

By 1967, the "Fishing School" program was in full swing with all state officers participating in their districts throughout the Commonwealth. Public interest grew rapidly and the program became a very popular Fish Commission educational activity with interest being shown by the very young as well as the very experienced angler. Attendance at the classes varied from as few as 25-30 to well over 1,000 people who came to learn more about the sport of fishing.

The personal touch that each officer contributed to the course, and this varied, added an increased impetus to the overall program. Fish identification, various lures and flies for different types of fish, lines, leaders, reels, rods, tip-ups, baits, hooks, sinkers, swivels and the care and selection of equipment were all discussed in detail. An illustrated lecture on reading the water (temperature and proper approach), both in lakes and streams, provided participants of the classes

with a wealth of information that even many seasoned anglers had yet to learn. Demonstrations on how to properly use the fly, spinning and bait-casting rods were given, along with proper presentation of flies, lures and bait in various possible fishing conditions.

I have personally had the opportunity several times to observe Paul instructing on the proper use of the various rods and he readily proves to the interested observer that the proper use of the fly or spinning rod is not a thing of mystery or difficulty. Many times, within a matter of minutes, Paul has taught a novice to keep the fly and line airborne, clearly indicating that mastering the basics of fly fishing is not nearly as difficult as thought.

The basic casting techniques also demonstrated with the spinning or bait-casting rod instills confidence in the beginner and with a little practice he becomes an "advanced" caster within a very short time. I feel this personal touch provided by our field



officers at the Fishing School programs is one of the reasons the course has become so popular — the ability of the talented instructor helps overcome apprehension of the novice when learning how to cast with any type of rod.

In 1968 the American Fishing Tackle Manufacturer's Association (AMFTA) awarded the Pennsylvania Fish Commission its coveted Golden Award for its Fishing School program. In 1969 the Garcia Company presented the Fish Commission with a gold-plated reel for its efforts in educating the public on the art of fishing. These were true tributes and nationwide recognition of the importance of the Fishing School program. By 1973 there were, by actual count, over 80,000 people who had attended a Fishing School program somewhere in Pennsylvania. At this writing, the figure is well over 100,000 and continues to grow.

Affirmation of the popularity of the original course is evidenced by the implementation of fishing courses by many of the prominent tackle companies. These spin-off courses, commercial in nature and usually fee-based, are of course, part of the business world's "free enterprise" system. The free courses offered by the Fish Commission are still an integral part of its overall educational program. No other state in the nation offers the opportunity to learn how to fish at absolutely no cost to the participants. After twelve years, the Fishing School program continues to grow; the course is more refined, the officers all talented, and the popularity of the

courses remains high. Paul, himself, has personally conducted over 152 such clinics, with a total of over 20,000 people in attendance which is a staggering figure for a single individual to attain, along with his other related duties as a Waterways Patrolman.

Another interesting aspect of the Fishing School program is the fact that Dr. Robert Butler, one of the nation's leading authorities on trout management now working out of Penn State University with the Federal Fisheries Unit, feels the Fishing School program is a valuable tool in fisheries management. Stated in the simplest of terms, Dr. Butler contends that by increasing the ability of the fisherman to catch more fish you allow a greater utilization of the fisheries resource, especially in most of the states that utilize a "put-and-take" stocking program.

A most important factor in regard to this particular program has been, and is, the ever-increasing sales of fishing license — from a low of 400,000 to a figure just shy of 1,000,000. While we are well aware that in the past short decade there has been tremendous progress made statewide in pollution control and abatement, resulting in much higher water quality, vast improvements in propagating and stocking programs, ever-increasing impoundment construction by our own Commission and other state and federal agencies, we would like to think that a major contributing factor to the increase in sport fishing in the Commonwealth has been the result of the combined efforts of our

field force and many other knowledgeable and skilled fishermen who have graciously contributed their time and talents to "shorten the time between bites" through the Fishing School program and by teaching many that "Fishing is fun and easy to learn."

It has been valid assumption that twenty-five per cent of the fishermen catch most of the fish, and it is our hope that the Fishing School program will have an appreciable impact on these figures and the percentage of successful, happy anglers will increase tremendously.

In summary, what have we accomplished with this program? What type of evaluation can we attach? If it has taught a freckle-faced youngster how to catch more fish and he pursues the sport in his later years, what is that worth? If it binds a family closer together, what is that worth? If it gives to the individual a deeper appreciation of the great outdoors, what value can we place on that? If it allows an individual to become closer to his Maker and gives him the opportunity to observe the countless miracles of the outdoors, what is that worth? We feel if we accomplish any of the above, or any of the countless other rewards too numerous to mention, it is worth a lot! If you feel you would like to learn to fish, or have friends or family who would enjoy the sport, look into the Fishing School program — we would love to have you.

Remember, it's easy to learn. Fishing is fun and relaxing — a million Pennsylvanians *can't be wrong!* **Let's Go Fishing!**

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HOLY COW!

by John Crowe

Most Pennsylvania fishermen have heard of Kettle Creek, Yellow Breeches, Fishing Creek, and other such famous trout streams. But few have heard of Little Conneauttee — unless they come from Erie or Crawford Counties. Nevertheless, in its way, the Little Conneauttee is one of the best. A meadow stream, it is rich in a variety of trout foods; knowing fishermen work it from season's beginning to end.

In its course through pasture land, the Little Conneauttee is placid, deep, and difficult to fish. Wading is awkward. The inconvenience is compensated by the size of the trout, either those native to the water or those stocked, which soon become indistinguishable from wild fish. One-pounders are ordinary; two-pounders are not unusual; and three- and four-pounders are always a possibility. In these days, some trout!

Years ago, when E. F. Nevers was president judge in Erie County, the celebrated "Cow Case" was tried before him. At the time there was some comment because the Judge owned land where took place events leading to a lawsuit. Although the Judge owned the land, it was leased to a man who owned adjoining property and who used it for the pasturing of an extensive herd of registered Guernsey cattle.

One warm evening in June, the defendant in the "Cow Case" was fishing a pool known as The Bend. There, low willows provided some cover. The man was crouching behind them, casting a streamer on a long line. A trout resident in The Bend was

known at the time as one of the largest in the stream; so it is not hard to believe that the angler was concentrating. In court he deposed that he neither saw nor heard a cow in the pasture behind him until, on a backcast, his streamer engaged the animal in a sensitive part of its anatomy, near the base of its tail.

The cow ran. The angler followed. The cow ran faster; the angler lost

line. Before he had gone fifty yards, the backing was coming off his reel. At this juncture, realizing a crisis, he increased the pressure, hoping the streamer would disengage or the leader break. Instead, the line separated from the backing. The cow then controlled the streamer, the leader and a double-tapered fly line.

In his suit, the plaintiff charged that the defendant repeatedly approached



the cow. Each time he did so, the animal ran in panic. The jury displayed no appreciation of the fact that the angler was only attempting to recover an almost new Crown double-tapered fly line. Once in the proceedings the plaintiff's lawyer contemptuously referred to the said line as "*a piece of string*."

As a result, allegedly, of action by the defendant, the cow died. The plaintiff's lawyer averred that the animal become overheated by exertion on a hot summer evening. Five days after the negligent acts of the angler, it was charged, the cow's death came as a result of complications induced by the aforesaid exertion and abuse. In restitution, the plaintiff demanded five hundred dollars, in which amount the jury found for him.

Some anglers considered the award unfair, pointing out that not one fisherman sat on the jury and questioning that a bit of exertion on a June evening could cause a cow's death. The case was tried in the autumn term of court and, for a minor lawsuit, it was followed with more than usual interest. Reason was that immediately after the cow's death its owner had posted his land (and the land leased from the Judge) against fishing. His action closed almost two miles of the very best Conneauttee water.

Serious trout fishermen in Erie, city and county, felt very bad about it. I was one of them.

One day soon after the trial I was eating lunch at the Nelson Hotel, across the street from the courthouse, when John and Paul came over to the table. Although neither was professionally involved, both were interested in the case, as lawyers in the legal aspects, as anglers in the closed water of the Little Conneauttee, a favorite stretch with all of us. We were sitting there, talking about the verdict, when Judge Nevers came into the dining room. He sat down at the table with us. For some reason, perhaps a quirk of ethics beyond the understanding of a layman, they changed the subject as the Judge sat down.

We had been talking about one and another casual topic when Judge Nevers himself asked, "What did you fellows think of the jury's award in the cow suit?"

There was a momentary silence

before John spoke: "The owner should be satisfied."

The Judge smiled. "I doubt if he is. He prizes his cows, but I don't believe he is sure what caused that cow's death, in spite of the veterinarian's testimony."

"Obviously, the fisherman was careless, not malicious. As for the owner of the cow: you know, as boys he and I used to fish for trout along that very same water. This is off the record, but we used to chase the cows away so they wouldn't scare the fish. I thought of it as the case was being heard, and I'll bet he did too."

"You must know him very well," Paul remarked.

"I'll say. I was raised on the next farm. He has it under lease from me now."

"Do you suppose . . ." John hesitated. Paul and I both knew what he had in mind. "That is, do you think he'll lift the posting, on his land and yours, now that he has a settlement?"

"You'll have to ask him about that." By this time the Judge must have guessed what was coming, but John is a man not easily discouraged.

"Well, Judge, I was thinking that if you suggested it might be — it might carry more weight. And you'd be doing the fishermen of this community a real service."

"I don't think it would be ethical for me to suggest what he should do about the posting." The Judge laughed pleasantly, but it was plain that John was getting nowhere. "There's nothing to stop you from asking, if you're concerned about the interests of the angling community."

"But I don't know him," John persisted. "You do; I don't see how he could refuse if the suggestion came from you."

"You know," Judge Nevers said, "sometimes this judgeship is a headache. People are always asking me to do things not within the province of the office. It never ends. Now, for instance, I came to this table to relax, and talk about trout fishing. And see what happens!"

We were still sitting about the table, talking, when the Judge had to leave for the afternoon session of court. He was no more than away when Paul turned on John:

"You sure butchered that!"

"Yeah? You were no help."

"Things like this call for finesse.

You might be able to intimidate a witness but *that* was Judge Nevers!"

There was more, but I didn't pay much attention. It was normal conversation between Paul and John.

Early the following spring, we heard discouraging reports of the Little Conneauttee. That good section was still posted and talk was that it would remain so. The cow owner was decent enough, it was said; he just didn't want any more unpleasantness, deciding that posting was the simplest way to avoid it. And trout season was coming closer day by day.

"Well, Paul," John remarked, "isn't it about time for that great finesse of yours to accomplish something?"

For Paul, the answer was restrained: "Just wait; I'm working on it."

One Saturday afternoon in late March, Paul, John, and I went for a ride. I thought we were going to look over streams, in anticipation of the approaching season. But when we had driven to the Little Conneauttee, with only a momentary stop at the first bridge, I realized the trip had more than a vague purpose.

On the Judge's land and on the farm next, the posters were still up. In fact, new ones had recently been placed. John was driving; at Paul's direction he went on down the road to a farmhouse, a dairy layout with numerous outbuildings.

"Here," Paul said, "is where the five hundred dollar cow lived."

When we got out of the car, I noticed one of Judge Nevers' campaign placards in a window of the house.

"Re-elect Judge Nevers!" it read, above the Judge's picture. Underneath was the usual stuff about honest, independent, fearless. It occurred to me that in this case the claims were justified.

At the farmhouse door we were directed to one of the outbuildings at the rear. There we found a man attempting to unload, single-handedly, a big framework from the back of a truck. The thing wasn't so heavy, but it was awkward, and the man was having trouble.

Paul got up on the truck. "Just a minute. We'll give you a hand," he said. "John, get over on the other side." Then he motioned for me to join the effort.

With four of us, the job took only a few minutes. The farmer seemed puzzled by all the help, but he didn't object, naturally.

Paul straightened his back after the unaccustomed lifting. "Nothing like a little exercise to take out the kinks," he declared.

"That was very kind of you, gentlemen," the man said. "Now what can I do for you?"

Paul answered, "Oh, nothing in particular. We were just driving around doing a little campaigning for Judge Nevers."

"You were!" The man was obviously pleased. "I'm for the Judge a hundred percent. Didn't you see his sign in my window?"

"Why, no, I didn't notice," Paul said guilelessly.

"Certainly. The Judge grew up on the next farm. He still owns it. He and I are old friends."

"Is that so?" Paul was convincingly incredulous. "Where is his farm?"

"Right over there." The man pointed. Even at the distance we could see a few of the bright new posters.

"That posted land? I noticed it as we drove past." Paul shook his head, gravely. "I'm surprised the Judge would post his land; that won't help him with the sportsmen."

"Those aren't the Judge's posters," the man said quickly. "They're mine. I rent his land."

"Oh, I understand. I hope other people do." Paul was very serious. "I'm afraid this election will be close. A few votes one way or the other might make the difference."

"Do you really think so?" the man asked, anxiously.

"I know so. The Judge has one weakness; he's too honest. He'd never cut a corner to get a few votes."

"That should be to his advantage."

"It should be, but you never can tell how much the vote will be influenced by things of no importance. For instance, the other day I was talking to a friend. He's kind of a screwball — wastes most of his time fishing for trout. He says he won't vote for the Judge. Other trout fishermen won't, either, according to him. I did my best to talk him out of it, but I doubt if I did."

"You know," the man spoke as if he were relieved, "when you fellows showed, I thought you were trout fishermen. There've been several of 'em

here lately, wanting permission to fish; or asking if I wouldn't take down my posters." He hesitated. "And something I don't understand: they all seemed to know the Judge owns the land next to mine."

"Why do they stop here?" Paul asked, his innocence childlike. "You don't mean . . ." he began, then stopped, as if the thought were too horrible to put into words.

"Yes, that's a trout stream down there. In fact, it's a very good stream."

"That must be why fishermen are sore at the Judge. Likely they think he posted the land. I guess they must all be screwballs; it's too bad there are so many of them." Paul looked at his watch. "We'd better get along. There's a lot of work to be done if the Judge is to win that nomination in the primary."

"You think he'll win in the general election?"

"Oh, easily. The primary's the battle. We'll have to do all we can before then."

I knew John was itching to say something, but he didn't have a chance. After we left, he started: "Why in hell didn't you ask him to take down those posters? You'll never have a better chance than that!"

"John, you had me nervous all the time we were there. I was afraid you'd blurt out something to spoil it."

"Spoil what? With a wonderful opportunity, what did you accomplish? Exactly nothing!"

"Wait and see. And don't you go near that place unless I'm with you. And don't say anything to the Judge."

A few days later I met Si Tompkins on the street. Si is a deluded individual who lets business interfere with fishing. His troutng is limited, but he's always ready to talk about it. Surprisingly, he mentioned that he's been out to Little Conneauttee the day before.

"Yeah. Water looks good for so early in the year. While I think of it, is your friend Paul entirely in his right mind?"

"Why?" Whatever my private ideas on that subject, I didn't feel I should convey them to Si.

"He asked me to go out to see a man on a farm out there, and to take someone with me. We were to ask for permission to fish some posted water come the season, and then find out about some more posted land belong-

ing to Judge Nevers. It seemed kind of screwy, but Paul has done me some favors, so I went."

Suddenly I recalled other visitors mentioned by the man we had talked to at the farm.

"When did you say you were there?" I asked.

"Yesterday afternoon. Paul drew a little map for me to find the place, but we couldn't find any posted land."

If Si hadn't seen any posting, it could mean only one thing: the posting was removed! That was exciting news: I could hardly wait until I got Paul on the phone. He did not seem astonished.

"Call John," he said, "and tell him what finesse will do."

It was early April, only days before the opening, that we were again at the lunch table in the Nelson dining room. John was facing the entrance. We saw a sudden look of agony come to his face.

"Now," he gasped, "is the time for finesse!"

Turning to look, we saw Judge Nevers coming toward our table. Another man was with him, one I couldn't instantly place, but who looked somehow familiar. The Judge introduced him as they sat down.

"Gentlemen, this is my old friend and neighbor on the Little Conneauttee. Perhaps I should warn him that you are all trout fishermen."

The silence was thick for a moment. It was the Judge's friend who spoke first, a peculiar look on his face.

"Did you say trout fishermen?"

"Yes," said the Judge, laughing, "but they're harmless."

"Is that so? Very interesting, I must say." That peculiar look was still on the man's face. In imagination I could see those posters going up again. A confused silence was broken by the Judge, as he addressed himself to John:

"I thought you might be interested in meeting this man."

"Oh, yes. Yes, indeed." John's fumbling was painful. "Yes, I've always been interested in — in registered Guernseys! Just like Paul, here."

That seemed sheer idiocy, for I doubted that John knew a Guernsey from a Holstein, or any other cow. But it must have been unrecognized genius, for the posters never reappeared on the Little Conneauttee.



Recipe for Stream Ecology Days . . .

by Dennis Scharadin

TAKE:

- One Creek
- Chemical testing kits
- Minnow nets
- Homemade nets
- Scoops of all sizes
- Microscopes
- Yardsticks
- Tape measures
- Pencils and tablets
- Lunches
- 140 Eighth Grade students in assorted boots and footwear
- One stream-shocking device
- 5 Fish Commission personnel
- 2 Nice sunny days

Carefully sort materials and instructors into three separate areas: biological, chemical and physical. Mix with students and have them develop data for the above areas. Allow to simmer for two days. Season with various discussions concerning water quality, and a stream shocking to show the fish life of the creek being studied. The end result is a student knowledgeable in stream ecology and the importance of clean streams.

For the past seven years, the BLUE MOUNTAIN MIDDLE SCHOOL students have been following this field trip recipe, which has been arranged by their environmental education teacher, Glenn Luckenbill. Needless to say, the program has been a success. Students have learned to determine water quality from biological indicators, the presence of insect and fish life; chemical data, pH, dissolved oxygen, calcium; and physical information: water temperature, average width, depth and water velocity. They have also viewed and participated in a stream shocking survey to determine the various types of fish that are common to that stream.

Photos on the opposite page and this show students receiving guidance from Assistant Supervisor Stan Paulakovich and Waterways Patrolmen Harry Redline, James Hazen and William Snyder.



'Snow Time to Fish!

by John Plowman

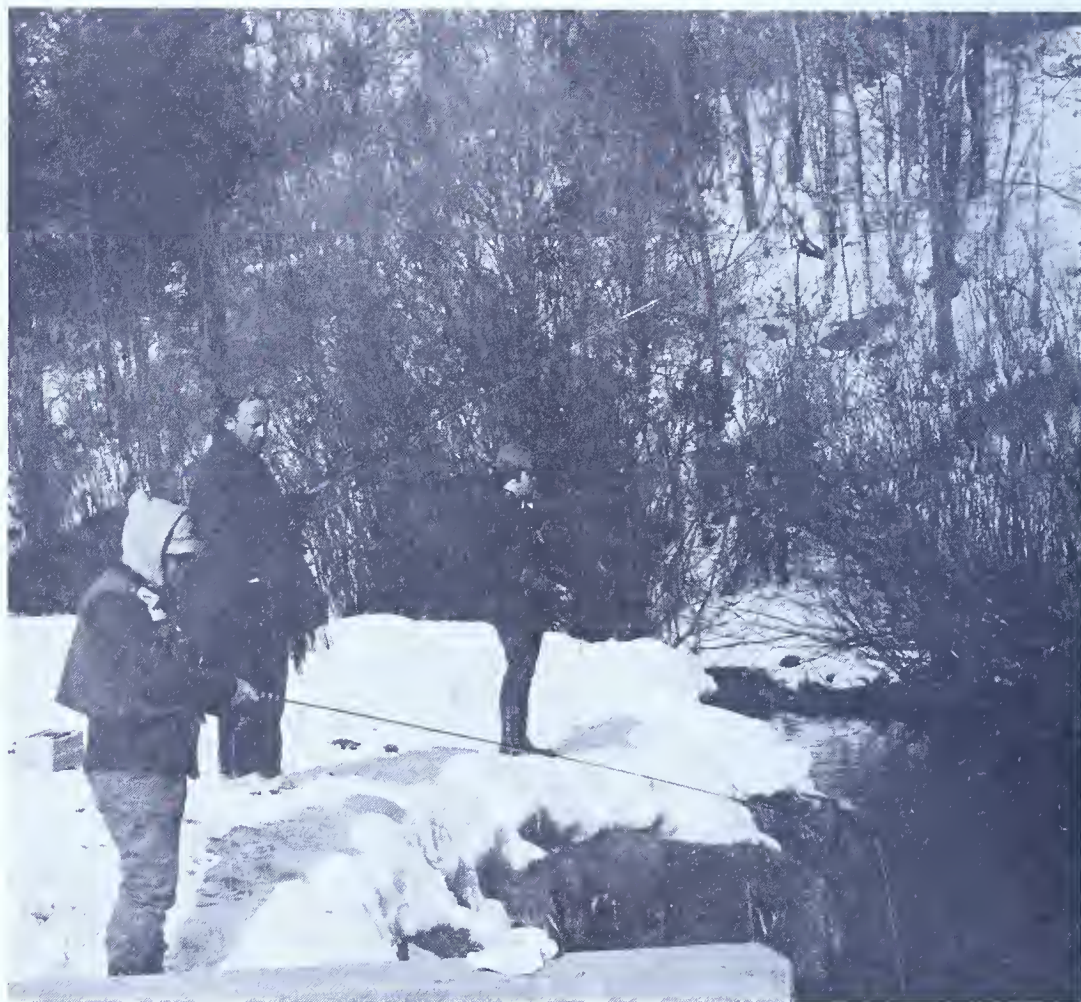
*Bundled in shawls,
hunting jackets,
whatever . . . this
is obviously for
hardy anglers only!*

"Determination!" That's the only expression I could think of when I first spotted the lineup of dedicated anglers positioned along the bank of Big Spring Creek that winter morning. After cruising through the Cumberland Valley in search of interesting wildlife pictures, we eventually found ourselves near Newville. This area is synonymous with trout and great trout fishing, so we decided to head for the FISH-FOR-FUN section and take a look.

There's usually no time spent there *by yourself* . . . previous trips resulted in "taking turns" at fishing the better stretches. Today was no exception, although I highly doubted there would be *any* activity — *period!* Making a difference this particular time was the fact that it was early February during the infamous "Winter of 1977," and we were contending with 16 inches of snow . . . where it wasn't drifted even deeper.

There they were, casting to the rainbows and browns found in this special fishing area in good numbers. Cars and trucks were squeezed into the few plowed areas along the road and in the parking lots. This day had turned out to be fair, compared to most so far. The mercury climbed to a shivering 20 degrees but the sun was making the day seem more tolerable. The snow had persisted, piled everywhere making living conditions for man and wildlife miserable.

A deep mantle existed right along the stream banks almost to the water's edge, where the warmer-than-air



water temperature kept it at bay. The trout seemed oblivious to the dormant surroundings outside the stream. A few would dimple at minute floating tidbits and the anglers were offering appropriate varieties of tiny size 22 midges.

With a constant temperature well above freezing, and maintained by good running spring flows, this stream rarely ices over, offering a year-round type of sport fishing scenario preferred by fly fishermen — especially those desiring a streamside setting instead of other places. There are few enough of these available during the kind of winters we've been contending with in the last few years. Most trout anglers will change tactics, reverting to ice fishing on lakes, or just turn to other pastimes. Limestone waters, such as the Big Spring, can actually extend fly

fishing relaxation when the world around us resembles the Antarctic.

This is not to demean, in any way, ice fishing and all the fun that's associated with it — we're devoted to that type of fun too; but, I'm just a little more contented that one can stand in knee-high snow catching trout than shoveling the white stuff off the driveway!

After watching several of the well-insulated anglers hook and release fish, I wasted no time in resurrecting my 7-footer out from under the pile of gear in the back of the car. Water levels were clear and normal for winter, so I selected a 6X leader that would permit using very small flies. One of John Behel's splendid #22 Hare's ear nymphs was tied up and several practice casts worked out the kinks in both leader and angler,



The author braves the elements at Big Spring's source.

evident after several month's absence from fishing while distracted by the hunting season.

When you're fishing the Big Spring, it's a case of casting to the trout as accurately as possible. The water is usually clear and not very deep. While the fish are used to the parade of fishermen seeking them constantly, it still takes a skillful presentation to fool them. Many resident trout in the FISH-FOR-FUN section have been hooked and released several times, and with each experience become more selective.

This famous limestone water; with abundant vegetation, such as watercress, elodea, hyacinth and duckweed, provides habitat for fish *and their food supply* — sowbugs and grass shrimp, among other. Successful anglers on the Big Spring, even during the winter,

tend to utilize small nymphs and tiny midges and wet variations that resemble these crustaceans.

The Hare's ear must have looked pretty good, since it fooled a fat rainbow about 12 inches. The fish sipped the fly as it passed beneath the overhanging willows bordering the far side of the stream. Those well-known shrubs have always presented a special challenge to visiting anglers. They're close enough to snag most of your better fly patterns while offering shade to trout lying below. Even in the winter, the bushes still seclude the fish, despite the absence of heavy leaf cover. The dozens of tightly tangled flies among the branches are recognized more readily in these times, attesting to many a cast too far!

Somehow, it seemed out of context to be playing that foot-long fish on

light tackle, in a free-running stream while fitted out with insulated long johns, goose-down parka and mittens. Don't even say it . . . I know, we go out and hunt deer, late-season grouse and bunnies in the snow without a second thought. But trout? You bet, as long as I can keep ice out of the rod guides, the feet warm enough and put up with snow drifts and frigid surroundings.

Casting sessions before we start shaking are followed up with pleasant visits between anglers over steaming coffee. And there seems to be a special comradeship among us when lured out of hibernation. Big Spring's FISH-FOR-FUN section was a bright spot in February during an incredible winter that wearied us all. Winter's here . . . consider fishing this way to beat the cold. You'll warm up with the first rise!



For years now I've been telling myself that it just isn't so. But after much serious thought on the matter, I have to admit it! *I'm a loser!*

I've been hunting and fishing most of my life and I've finally come to the conclusion that I am a perfect companion to anyone whose hunting or fishing ego needs a boost. I'm the guy

who always shoots less game and catches less (and smaller) fish.

I'm convinced that there's not another person in the whole world who has read more outdoor articles on how to do this and that, about this and that. I spend hours practicing casts, sighting in a rifle, shooting claybirds, scouting territory, and sundry other

things which should make me invincible in field and stream. It just doesn't work.

Now I'm sure there are others who are in the same leaky boat, but I just haven't been lucky enough to have been associated with them — of course!

It's gotten to the point now that I

The Other Side of the Coin

by Kermit G. Henning

am so fed up with these people who write all these sickening articles of success afield that I feel it's time to tell the story of we who keep plugging away year after year without all that pride of accomplishment.

That's not to say I don't enjoy myself. There is nothing I would rather be doing than hunting or fishing. Some of my happiest moments came out of some very disappointing (and often very embarrassing) adventures afield.

On the other hand I can be proud of many of my disappointments. How many guys do you know that can brag about shooting at and missing eight nice bucks in eight years? Who else can boast of a record of twenty days afield in small game season without firing a shot? How about ten years of fishing the Susquehanna River (proclaimed by experts to be one of the country's best smallmouth streams) and catching my limit twice while others limit out daily from the same boat?

Surely not everyone is successful all the time . . . most, only occasionally. I even meet with success once in a great while. But for downright disappointing adventures, I top the list!

I don't want to give you the impression that I only hunt and fish to fill the freezer. If that were the case, I would have quit a long time ago. I would enjoy, however, just once being able to brag about shooting a double on pheasants, or bagging two grouse in one day, or consistently catching six nice smallmouths, or shooting at and hitting a whitetail trophy.

I am a school teacher and, although I shouldn't admit this, my schedule gives me quite a bit of time to devote to the pursuit of fur and feather. I have a deep sense of sympathy for the guy whose eight-to-five job only leaves an occasional weekend for hunting and fishing.

Naturally, then, since I spend more time hunting and fishing than the average Joe (or Joan), I have more chances to foul up. Believe me, I've taken full advantage!

In Carlisle, Pennsylvania, there is a wonderful organization known as "CLEAR" — Citizens for the Letort Environment and Restoration. This group's main concern is the restoration of the Letort Spring Creek, an excellent native trout stream. Every Saturday in May, CLEAR holds clean-ups on the Letort to clear the creek of litter and debris thrown in the water by jerks who don't give a hoot about anything. On one chilly Saturday a few years back, imagine how proud I was to be the only one in the entire stream to find a snapping turtle, who promptly bit a hole in the toe of my waders — filling them with icy water!

My deer hunting disasters are enough to make you cry. I really only started to hunt deer seriously when I went to Mansfield State College in Tioga County. Tioga is consistently among the leading counties in numbers of deer harvested annually. The opening day of the 1966 season started out with my usual good fortune — pouring, driving rain. At about nine o'clock, after I was thoroughly drenched, I saw four doe walking through the woods toward me. As I watched them, I kept thinking that there might be a buck with them. There was. He was directly behind me. I heard him, wheeled around and fired. Down he went! But, of course, he got right up again and started running . . . he ran toward my roommate who promptly shot him. My roommate was sure happy to have me along to help drag out his six-point buck!

I've since joined a hunting camp in Bedford County and have been fortunate to have missed a buck every year that I've been a member. I've become a master at helping others drag out their deer.

It's not so bad missing a nice buck but when they run away from me they always run right up the barrel of another guy from our camp. They're always sure to thank me.

As far as fishing goes — what a disaster!

I fish the Susquehanna with another teacher from the school, Bob Kunkel, from Shiremanstown. Invariably, he catches more and bigger fish than I do.

One Labor Day we started catching bass at just about dusk on almost every cast. He was catching two- and three-pounders, I put all mine back.

I took him to a spot that I had found in the lake at Pinchot State Park. He actually had the nerve to catch three nice largemouth bass out of my "secret" hole and I couldn't get a strike.

Would you believe that I've actually read three hardback books on bass fishing and every fishing article in every outdoor magazine for the past numbers of years? It's just a matter of being unlucky.

I must tell you, though, of one time that I really skunked him. We were fishing the Susquehanna late in September and again it was raining. We thought we would fish for a while for bass and if we didn't have any luck we would try for some big channel cats.

We were in Bob's boat and as he was poling us away from shore, I was rigging up my rods. He eased the boat alongside a big grass patch and I dropped my lure right beside a large submerged log. Well, no sooner did the line hit the water when all fury broke loose. A smallmouth bass came out from under there with my plastic worm firmly hooked in his mouth . . . the likes of which I had never seen in that water. Twenty minutes later Bob netted him — twenty-one inches, five pounds. On the very next cast I caught another bass almost as big. And Bob didn't have his rod together yet! I promptly reminded him of the score — I won't tell you his reply.

So my advice to anyone who feels as I do, that they just are not lucky, is to stick with it. Don't let the disappointments and frustrations get you down. Sooner or later you are going to kill a nice buck, or shoot a limit of grouse, or catch a lunker, and you're going to have a good time doing it — I did!

THE ANGLER'S NOTEBOOK

by Richard F. Williamson

Author's Note: December is not a popular fishing month (unless you are a dedicated "high water" river fisherman or a hardy ice fisherman) but it is a good time to consider tackle and lures for use next season. That is the theme of the Notebook this month.

You don't have to spend money for two rods, one to use with dry flies and one for wet flies or one for fishing with small natural baits and one for use with floating bass lures. A rod that feels comfortable in your hand, that gets line out well and that has enough backbone to handle a fish is a multi-purpose rod, and that is all the average fisherman needs.

Good all-around plug colors are white with red head; silver, to imitate a minnow; green and white, like a frog's back and belly, and yellow, which imitates a perch.

Long-shank hooks are used for streamers, and the best are those that have a small gap (the distance between the point and shank of the hook), rather than a large gap more in proportion to the shank length. Streamers are used mostly in trout fishing, and hooks with a small gap are more effective.

Buy the best fishing lines you can afford. Lines of inferior quality can save money, it is true, but a poor line can also cost you a lunker fish.

A rocky island, with the water around it tapering off to a good depth, is a walleye fishing spot. Anchor the boat the distance of a long cast from the island, then work the lures or bait from the shallows into the deeper water.



Use caution in buying trout flies. Learn what patterns take fish in the waters you enjoy. You'll be surprised at how relatively few they are — in comparison with the vast numbers available. When your choices are made, purchase a number of each pattern in sizes ranging from 8 to 18. They'll do a good job for you.

Floating and diving plugs shaped like small fish are excellent lures for bass. These plugs are available as floaters, for surface action, or as sinkers, for use under the surface of the water.

You can get fairly close to beds of lily pads and still get action if you fish slowly and quietly. The fish are hiding under the pads, relying on the big leaves for protection and at the same time are alert for anything that resembles food that moves in the water around the lilies.



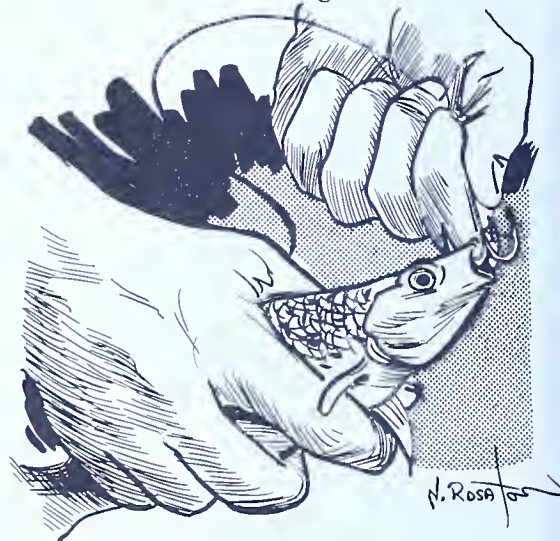
Don't be fooled by a label on a lure that says, "All you need do is cast it out and reel it in." No lure ever invented will catch fish on its own.

Level lines are recommended for wet fly and all-purpose fishing, double tapers for dry fly fishing, and shooting tapers for longer casts with heavier lures such as bass bugs.

The Eagle Claw is the most widely used fresh water bait hook. The point is rolled in and offset and keeps a good grip on a fish. It is made in all styles, finishes and sizes. It is especially popular in bait fishing for trout, bass and pickerel.

Points to look for in a good spincast reel are handles of substantial size, a drag that is conveniently located and easy to adjust, and working parts that operate smoothly.

Try a treble hook, with one point inserted through the upper jaw, in using big minnows as bait. Some of the best southern bass anglers, incidentally, fish regularly with live baits as large as the one indicated in the proportions in this sketch. The treble hook will do a better job than a single hook when a fish takes the big bait.



White, with some scarlet, and gray, with some brown and a bit of red, are fine color combinations for deer hair and chenille bass bugs.

Old, time-tested lures are best, of course, but an angler must be willing to try new ones too. The best lures on the market today originally had to compete for space in stores and tackle boxes.

It always pays to read the fishing instructions with a new lure, but don't become a slave to those directions. Try some methods of our own. They may also take fish.

Plastic worms can be obtained in dozens of colors and color combinations. Are you puzzled? The basic colors are purple, blue, black and red. Be sure to have these; but, it's fun to try other colors, too, even the most outlandish ones.

A good landing net for stream use should have a bag about 15 inches in diameter at the top and about 24 inches of depth.

As a key project for the winter season, go over your tackle and lures carefully. Replace items that are battered and worn out. Replenish items that you use often. Check guides on rods. Make sure reels are cleaned and lightly oiled. Then sit back and wait for the opening of the new trout season.

Everyone fishes in Pennsylvania . . . including President Carter!

In early October we were delighted when the President of the United States spent a few hours on two separate days, fishing in southcentral Pennsylvania. The wearer of Complimentary License #1 fished a small limestoner for trout, demonstrating considerable skill with fly fishing tackle, and returned the next day for bass on a secluded lake. The fishing trip was unpublicized. The President was most cordial with Fish Commission personnel and we were thrilled with the opportunity to help provide the head of the most powerful nation in the world with some brief moments of relaxation—fishing in beautiful Pennsylvania.



Director Abele pins Complimentary License #1 on President Carter.



Conversation turned inevitably to conservation. The camera caught the President in a reflective mood.

Fur-bodied Spent Ants

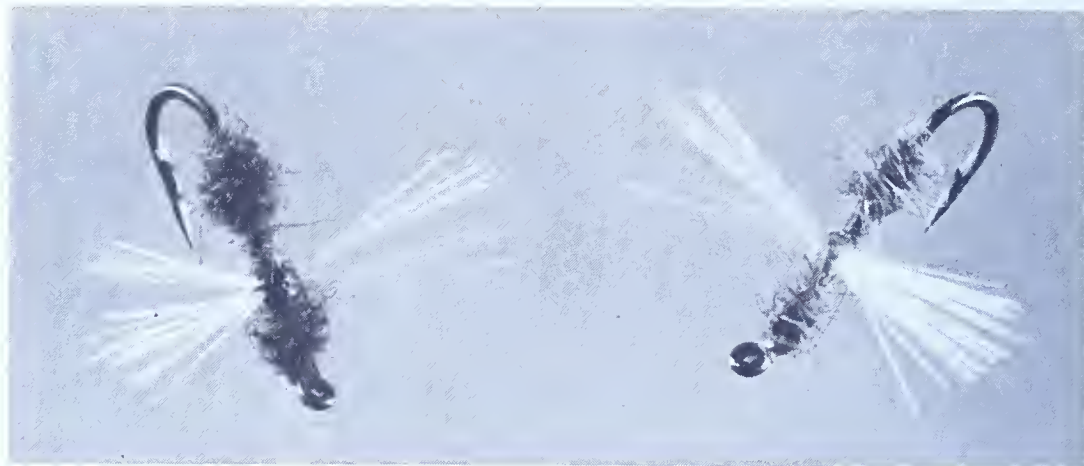
by Chauncy K. Lively
photos by the author

There are certain fly patterns that become identified with specific streams because they are particularly effective on those waters. Any mention of beetles and jassids almost automatically brings to mind the Letort and when I think of Penns Creek, stone fly nymphs are suggested. I learned about the importance of ants on Spring Creek, particularly at Fisherman's Paradise, where ant patterns have earned an exalted rank.

During the early days of the Paradise there was a refreshment stand outside the main gate where anglers could buy sandwiches, soft drinks and items of fishing gear — particularly flies. The stock of fly patterns was generally excellent but most in evidence were boxes of hard ants, tied wet-fly in black, brown and red and in a variety of sizes.

There was good reason for the ample supply of ant patterns. In those days the Paradise regulations permitted the killing of two trout of prescribed minimum size and it was not unusual to see a happy angler trudging along the path from the woods, carrying an arm-long brown trout to the checking station. Naturally, a trout of trophy size attracts a lot of attention and soon the lucky angler resembled the Pied Piper, with an accumulating crowd behind him.

Eventually, someone would ask the obvious question, to which the answer would invariably be, "Black Ant . . . size #16." That would trigger a small stampede to the refreshment stand and soon the ant bin would be empty, much to the chagrin of stragglers who were late in getting the word. I've often thought that an enterprising fly tyer could have set up shop along the road next to the Paradise and made a small fortune tying flies to order. There were that many anglers who would have paid a king's ransom for *the fly*.



Above — Finished Black Spent Ant, left; Cinnamon Spent Ant on right.

In the early 1950's it was our pleasure to introduce Paul Young to Pennsylvania trout fishing and on our way north we stopped at the Paradise for a few hours. Large browns were surface-feeding on tiny insects and Paul, fascinated, chose to watch, wondering how trout of that heft could afford to expend the energy to rise for such minute fare. Large trout were not strangers to the Michigan angler but on his home streams their capture generally meant fishing after dark with large flies.

Just above the upper bridge was a large willow tree with an arched branch touching the water, forming a shaded canopy. The pull of the current against the trailing branch would cause it to flex, lift an inch above the surface and dip down again in a rhythmic, repetitive sequence. Lying just behind the branch was a fine trout which I chose to ignore because I thought he was in an impossible position. But Mr. Young had spotted the trout, too, and he suggested that the footbridge would give him a fine vantage point for his movie camera if I would try for the trout.

Now I was somewhat in awe of fishing with one of America's great fly fishermen and I felt like a piano student performing for Arthur Rubinstein. But I didn't know how to decline gracefully, so I nervously tied on a size #22 Cinnamon Ant, tied spent with a fur body. I punched a cast under the canopy, knowing full well that the leader or fly would run afoul of the trailing branch. But instead, miraculously, the branch lifted clear at precisely the right moment and the fly floated under, directly into the jaws of the waiting trout. A gleeful Paul Young recorded the action on 16mm

film, from the cast to the netting of the fish, and I feigned nonchalance, as if this were an everyday happening. But I should have retired then and there because I'll never make a luckier cast.

I've had outstanding fishing on many streams with hair carpenter ants and the little fur-bodied ants, both upwing and spent, but some of the Paradise experiences stand uppermost in memory. We were there during a mating flight of tiny winged ants when the stream was virtually blanketed with their spent forms for several hours. I was fishing the project's upstream water with a little black spent ant and took trout after trout along the pumphouse wall. They were big, high-jumping browns that took the fly with the most imperceptible of riseforms.

My own version of the fur-bodied spent ant is quite like the now-standard pattern, except for the wings. Instead of a hackle wound at the waist and bunched or clipped top and bottom, I use two small bunches of hackle barbles mixed — with tips of one bunch matched to the butts of the other to achieve uniform density overall — then separated and flattened, following which they are trimmed to size. I have been using this type of spent wings for several years with good results and it allows me to use the large (and otherwise often useless) hackles from necks, preserving my small hackles, the supply of which is growing critical these days.

The illustrations show the dressing of the Spent Black Ant but the Spent Cinnamon Ant is identically tied with brown tying thread, reddish-brown body dubbing and pale ginger or dark cream hackle barbles.

To Dress a Spent Black Ant:

Left — Clamp a dry fly hook in vise (best sizes are #18 to #24) and tie in fine, black tying thread just forward of the center of shank.



Right — Select a large, medium dun tackle and stroke the center rib from the tip downward to splay the barbules at right angles. Cut a bunch of 10 to 12 barbules from one side of hackle and place, tips down, in Hair Packer. Then cut a corresponding bunch from other side of hackle and place in Packer, butts down. Withdraw all barbules as a single bunch and roll between fingertips to mix.



Left — Bind bunch of barbules to top of shank with figure-8 turns and cut off tips to proper wing length. Then bring thread up through barbules on near side, over shank and through barbs on far side. This separates and spreads the barbules.

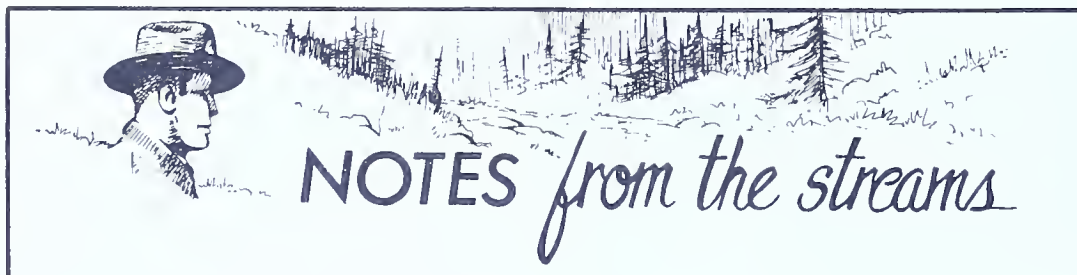
Right — Make a turn of thread around shank behind wing. Then bring thread laterally under base of far wing, over shank in front, under base of near wing and over shank behind wings. This maneuver flattens the wings. Then wind thread to bend.



Left — Wax a short length of the thread next to the hook and apply a dubbing of fine, black fur or kapok. Wind dubbing to form ball-like abdominal gaster. Then wind thread to three turns in front of wings, leaving narrow waist.

Right — Dub a bit more fur on thread and wind a smaller ball (the pedicel) in front of wings. Whip finish at eye and cut thread. Apply lacquer to head and windings at base of wings. Finally, trim ends of wings round.





REJECT?

Before a recent fishing outing to Nockamixon Lake, my son, daughter, and wife stopped to get a fishing license for the latter. Upon leaving, my 6-year-old-son wanted to know why we didn't get him a license. My explanation, concerning his age seemed to satisfy him.

After about an hour of fishing, my son started in with the questions again and asked his mother how many fish she had caught. My wife replied that she had not caught any yet. After thinking it over for about 10 seconds the boy piped up and stated to his mother, "You're not too good a fisherperson, Mom, you better take your license back to the store."

Stan Plevyak
Waterways Patrolman
N/Bucks County

A MATTER OF PREFERENCE?

I found a rare opportunity to get in a little fishing the other night. I went with a good friend that works for a "sister" agency. We picked a nice spot above Lewistown on the Juniata, lit our lantern and settled down on the bank for an evening of fishing. As I was sitting to his left, about five or six feet away, I was suddenly startled by him jumping up and striking at his pants leg in a frantic manner. It appears a hellgrammite had crawled up from the water to come ashore to molt and had mistaken his leg for a rock to crawl under. What surprised me was the fellow's reaction to a small "harmless" insect nymph when he is not above slapping a bear on the behind as he releases it from a trap.

Larry Baker
Waterways Patrolman
Mifflin/Juniata Counties

UNSCHEDULED STOCKING!

During one of our inseason trout stockings on Otter Creek, Jeff Hoffmaster, one of the many dedicated sportsmen who freely contribute their time and efforts to the trout program was, as usual, ready and eager to carry buckets of trout to the stream to be released. However, this time as Jeff prepared to liberate a bucketful of rainbows the stream bank where he was standing gave way and consequently we stocked 3,250 trout *plus* 1 man!

By the way, there were no casualties, fish or men, and Jeff's enthusiasm was not dampened as he was still carrying buckets at our last stop.

Ronald L. Hoffman
Waterways Patrolman
S/York County

SINNEMAHONING STRANGER!

I would like to know when the last eel was taken from the streams of Cameron County. Last month a 35½" eel was landed at the tailrace of Stevenson Reservoir. Sinnemahoning Club President Malcom Kitchen took pictures and recorded the event. Sinnemahoning Creek is polluted and not much fish life survives between Lock Haven and Driftwood so only a good guess could tell how the eel got there.

Stanley G. Hastings
Waterways Patrolman
Cameron County

BARGAIN FOR "LAND-LUBBERS"!

Occasionally I am forced to listen while someone bemoans the cost of a fishing license. I always try to put it in the proper perspective one way or another. After a deep-sea fishing trip off the Jersey coast, let me say this: For \$7.50, in Pennsylvania you receive one year of good to excellent fishing — depending upon how hard you pursue your sport. For that deep-sea trip I paid twice that: \$15.00 for one day of fishing and due to the sea conditions got to make only three casts until I was so sick I spent the rest of the time "feeding the fish."

Robert Lynn Steiner
Waterways Patrolman
S/Luzerne County

PREMONITION?

While on patrol of the Conewago Creek this past spring on a sunny but very blustery day, I was riding along the creek watching for sucker fishermen and enjoying the fact that the snow was pretty well about gone, thus allowing anglers and the writer to get out and escape that terrible cabin fever feeling.

Well, as I said, it was quite windy and I

was looking at the creek and for no particular reason I put my foot on the brake and, of course, the car came to a slow halt. I turned my head slowly to look down the road, simultaneously wondering why I had stopped the car. Well, just then a very large cedar tree crashed onto the road in front of me! As I returned the way I had come, I could not help wondering why I had stopped the car without thinking about any problem. I was also relieved that I did not have to call Supervisor Richard Owens and try to explain how a large tree fell on the car!

Warren W. Singer, Jr.
Waterways Patrolman
Adams & N/York Counties

LITTERBUGS!

Last summer I saw more littering by underage drinkers than any previous year. The "beer party" juveniles have really added to the mass in and around the streams in my district. It looks like the Deposit-Return Laws should be pushed along with some stern law enforcement to help alleviate the problem.

Stanley G. Hastings
Waterways Patrolman
Cameron County

BEST WISHES —

When you go fishing, may you have:
Enough sunshine to brighten your day...
Enough skill to catch the big ones...
Enough success to keep you eager...
Enough appreciation for the beauty of nature not to litter...
Enough courtesy and respect to thank the landowner...
Enough foresight to take along a child.

Donald Parrish
Waterways Patrolman
Beaver County

WINTER RAINBOW —

On the opening day of the 1977 winter trout season an unusual thing took place. Joe Keppel of Ambridge and I observed a "Rainbow." However, the only "pot of gold" we could find at the end of it was the beautiful Ridgway Reservoir and its great winter trout fishing.

Bernie Ambrose
Waterways Patrolman
Elk County

"FUN THING" —

On preseason stocking of Lizzard Creek, Carbon County, on March 10, 1978, we had the help of the Senior Advanced Biology Class of Jim Thorpe Junior-Senior High School, as in previous years. 22

young girls and 7 boys really literally and figuratively "waded into" the job. Under the supervision of the driver and accompanying sportsmen, they worked on the truck in turn and planted the trout in the stream with buckets, etc. Several went over their boot tops, sometimes with help or on purpose, I think!

F. W. Ohlsen
Waterways Patrolman
Carbon County

NOT IN STOCK!

For years I've been telling my wife what a good memory I have. The only problem is that it's just a little short. Consequently, I write notes to remind me of things that are important. During one of my visits to our Regional Headquarters in Mifflintown for supplies I had my usual trusty list lying beside me on the table. My supervisor picked up the list and said, "We can fix you up with everything but Judy's wedding gift." I had mistakenly written my supply list on the backside of one of my wife's store notes! Maybe I had better write myself a note to remind me to be more careful of what I write my notes on.

Ronald L. Hoffman
Waterways Patrolman
S/York County

"IF AT FIRST, YOU DON'T SUCCEED..."

While on patrol of Lake Arthur, Deputy John Cammisa and I observed a motorboat with too many numbers spread over the front half of the boat. Upon investigation we found the gentleman had placed his *hull serial number* on the boat! Two weeks later we checked the boat again and this time the owner placed his *zipcode* on the bow of the boat. Officer Cammisa jokingly told the gentleman he has to get it right the next time since he doesn't have any other numbers to choose from on his registration card! Maybe the third time's the charm.

Eugene Scobel
Waterways Patrolman
Butler County

GREAT HELP!

On occasion waterways patrolmen and special waterways patrolmen have the opportunity to work on State Park Lakes. The most widely used in Bucks County being Nockamixon State Park, consisting of 5,400 acres of land that includes a 1,450 acre lake, which is 7 miles long and has 30 miles of shoreline. The facilities include an Olympic size pool, 500-plus boat marina, picnic areas, bicycle trails, and hiking trails. The park generally draws a crowd of over 20,000 people on Saturdays and Sundays.

Nockamixon State Park is under the

Supervision of John Wiediger; he and a handful of park rangers, guides and secretaries run the park very efficiently. In fact, they also help the Pennsylvania Fish Commission a great deal in public relations and law enforcement. Not enough can be said about their devotion to their work and to helping others. "Thank you," for a summer which many of us will not forget.

Barry R. Clymer
Special Waterways Patrolman
Bucks County

MORE "TITANICS"?

While patrolling Nockamixon Lake, Park Ranger Timothy Mack talked to two separate boat owners who thought they had the most logical explanation for not having personal flotation devices on their boats. Both owners informed the ranger that they did not need the devices because their boats were "unsinkable." This reasoning seems ironic in that some of the world's most costly tragedies occurred on ships which were believed by many to be unsinkable. I am sure that many future tragedies can be averted if we all realize the importance of having the required safety equipment on our boats and use good common sense while participating in all our water-related activities.

Stan Plevyak
Waterways Patrolman
N/Bucks County

SHAMEFUL!

On the night of April 25, two individuals entered the Starview Sportsmen's Association Cooperative Trout Nursery to do a little trout "fishing" — *with landing nets in the raceways!* Fast and sure action by club members Ken Heindel and Art Kline resulted in the apprehension of the individuals involved and fines in excess of \$200.00. My hat is off to these fine gentlemen for their willingness to get involved and their dedication to the Cooperative Trout Nurseries Program.

Ronald L. Hoffman
Waterways Patrolman
S/York County

"Tacky"!

While on a recent patrol which took me on the old railroad bed that borders Bowmans Creek, I had just crossed an old trestle when I noticed my vehicle was getting a flat tire. I stopped and put on the spare and tossed the tire which had gone flat into the back of the station wagon and proceeded along my way, thinking I probably picked up a small nail from the old trestle. The following day I stopped at a service station and asked to have the flat fixed, informing the repairman that I would be back in an hour for the tire. As I

was pulling away from the station I heard the worker calling out to me to stop. When I went back, he asked me if I were trying to play a joke on him or what and pointed to a spot on the tire where I, for the first time, saw the head of a large 6" long by 3/4" square railroad spike protruding from a part of the tire that had been to the rear and entirely escaped my notice when I removed the wheel!

I am thinking of entering this in the Guinness Book of Records. But no kidding, I am very fast becoming a firm believer of "Murphy's Law." If it can happen, it will usually happen — *to me!*

Claude M. Nelfert
Waterways Patrolman
N/Luzerne County

TALENTED ANGLER —

While on patrol on the Juniata River on the opening day of bass season with Special Waterways Patrolman George Stetler, we observed and checked many fishermen on the stretch of river between Mount Union and Newton Hamilton. The water conditions were not the best on opening day, being a little high and muddy from rains we had been having the past few days. The individual angler success was not too good with a few fishermen having only about two or three bass by 9:00 in the morning.

As we drifted by a solitary fisherman about two miles above Newton Hamilton we at first couldn't see his fishing license. I brought the canoe in close to him from the downstream side and asked how he was doing. It was immediately apparent the young man was blind. He was standing about four or five feet out into the river and fishing with bait. He turned to us and said he wasn't doing too bad, and lifted a stringer from the water. There were about eight or nine fish of good size on the stringer including a few nice bass, a rock bass or two, a few channel catfish and fallfish.

As I would imagine most people would be, I was rather surprised at his success — considering his handicap. We talked for a while and he told me his eyesight wasn't mandatory for a person to enjoy fishing. He could easily feel the fish strike and, after bringing it in, he could easily tell what type of fish it was and if it was legal by feeling it. About the only assistance he needed was someone to bring him to the river and take him home after he finished fishing.

It was very satisfying witnessing this fellow thoroughly enjoying himself despite his sightless condition. The fact that he was enjoying better success than most others I had checked made me realize, also, that we sometimes have misconceived notions as to the ability of others when they are beset with handicaps of various types. This fellow did much to show me how wrong we can sometimes be.

Larry R. Baker
Waterways Patrolman
Mifflin/Juniata Counties

Ashore & Afloat

by Gene Winters

There are few of us who really expect to find a new boat under the tree this Christmas. But some fortunate folks will probably at least unwrap the keys to one. Chances are, however, it won't be a surprise because the keys will most likely come wrapped inside a bank note or half a dozen sheets of finance company paper — especially in the case of a brand new boat which, in many cases (thanks to inflation!), rivals the price of a luxury car.

I'll never forget financing my first powerboat — it was quite an experience. To many, it wasn't an expensive boat. But to me, a poor working stiff trying to raise a family, it was expensive enough to rate a trip to my friendly hometown banker. That visit opened the banker's eyes as well as mine.

I had the dubious honor of being the first boat loan customer this particular bank had ever entertained. The bank manager was not unknown to me, nor I to him. We had attended the same school, and although a couple of grades apart, had at least visual recognition of each other through the school years. Also, I had been dealing with this individual and his bank for almost ten years, with the usual civil amenities: checking and savings accounts, car loans and safe deposit box rentals. Credit record was unblemished and I had enough years on the job and had stayed in one place long enough that even the Federal Reserve would have considered me an excellent risk. But the frown on the young banker's forehead was unsettling. It was obvious that something was disturbing him.

Our conversation had slipped casually and effortlessly from exchanging the pleasantries of the day into completing the necessary application forms. My pre-conference telephone



Financing a boat for recreational purposes was not always an easy matter.

calls had simply advised the banker I needed "X" number of dollars for "X" number of months. The phone call resulted in a very warm welcome to a good customer and, since the bank was in the lending business, I had foreseen nothing but smooth sailing, even before I got the boat.

Still, that furrowed forehead bothered me. Even the incessant squeaking as the banker rocked back and forth in his four hundred dollar swivel chair was unnerving me. A sudden burst of anguish rushed into the pit of my stomach when, with a firm and steady push, he swirled until he was staring thoughtfully through a large plate glass window into a beautifully blue summer sky.

My mind raced into the past. My payments on the car were current. I had half a dozen paid-off bank loan receipts safely tucked in my safe deposit box in this very bank's vaults. Indeed, when I bought my last car, I had gotten a verbal loan approval for "X" number of dollars before I even picked out a car. Loans were as automatic as a phone call. But now, suddenly and face-to-face, it was obvious a business confrontation was brewing.

I began counting the "ahs,"

"uhhs," "mmm huhs," and even his eyelid blinks-per-minute in an effort to find a common ground... trying to interpret his moaning reaction as he clutched my application papers in his firm hands.

"It says here you want to buy a boat," he finally said. His voice broke the silence with the intensity of a summer squall's most potent thunder-clap.

"Yes, sir," I replied meekly, somewhat apologetically.

Suddenly, I was on the defensive without even knowing why.

"A boat," he repeated in nondescript tone.

"A boat," I echoed, trying to sound equally nondescript.

"Are you sure you really want to buy a boat?" He was finally moving into at least some recognizable form of communication.

"Yes, sir," I replied, a shade more positively and firmly.

"A boat?"

"Yes, sir, a boat." I replied more emphatically this time. When it brought no immediate response from him, I suddenly launched into verbage.

"You see," I started, "if I take my wife and five kids to the movie once a



Does a boat with indoor-outdoor carpeting qualify for a "furniture" loan?

week, it will cost me about ten dollars and we may not even like the movie. Just about anything we do will cost money — even more if we each, individually, do our own thing."

No reaction.

"So," I pressed on, "if we buy a boat, it's something we'll all enjoy. The money we save on movies, eating out afterwards (doesn't everybody?), the cost of wear and tear on the car going to a movie that we probably wouldn't even like would go a long way towards the boat payment."

Although he made no reply, the manner in which he shifted his 200 pounds in his \$400 swivel chair told me my defensive reply had not been too impressive.

"Besides, a boat would tend to keep the family together longer," I jumped in to keep the conversation rolling along on its new, high point. "And we all know how families are falling apart this day and age," I added, moving in with the clincher. What good old American banker could ever stand by and let the backbone of this country, *the family*, disintegrate on his marbled floors?

"You know what they say about *boats*, don't you?"

I was about to get some words of

wisdom from one of the financial pillars of my community. Not beyond taking advice and learning from the experience of others, I waited anxiously for the voice of knowledge.

"They say," he started, "a *boat* is a *hole in the water* into which you *throw money*."

Heaven save me! Even though I was relatively new to boating, I had heard that old pun far too often and was never sure it was funny the first time. I managed a weak, sick grin and waited for him to continue.

"While it may be your money that gets thrown in the hole, I'm not sure the bank wants to buy the hole."

My stomach was now lying on his marbled floor.

"You see," he continued, never looking me in the eyes (a sure sign you're in trouble with a banker), "we've never financed a boat."

"Never financed a boat?" I asked in genuine disbelief.

"Nope. At least not that we know. It's possible some folks lied, telling us they needed the money for medical bills and bought a boat instead. 'Course, that's fraud, you know," he admonished.

"Well, if the boat got them outdoors it may have had medical therapeutic

value," I answered, defending, without realizing it, any liars the bank may have had in the past.

"Don't you need some new *furniture*?" the banker pressed on.

My mind raced through our six room and bath house in ten seconds flat. Well, maybe we could use a new sofa and the rug is getting a little threadbare. And what are those funny noises the refrigerator's been making lately? How could the banker possibly know all this? While we were business acquaintances, we certainly didn't move around in the same social circumstances. The banker had never even set foot inside my house, and there hadn't been time to talk to the neighbors (friends?).

"You see," he explained, "if this little block, the one that says 'reason for loan' said '*furniture*,' I could have you out of here with cash in your hand and in ten minutes."

He was striking a deal.

"But I don't want to buy *furniture*," I insisted. "I want to buy a *boat*."

"You want to buy a *boat*. You know it, I know it; but, the bank doesn't need to know it. I'll have my secretary retype the papers reading '*furniture*' and get the cash from the drawer at the same time.

"But I don't want to lie," I protested.

"Do you want the *boat* or not?" His voice had become firm.

"Yes, sir," I replied meekly.

"Then sign. After all, I'm your banker and I'm here to give you advice and serve you."

"Okay," I replied, barely above a whisper.

True to his words, ten minutes later I was walking through the door, clutching a handful of brand new bills.

"Be careful," the banker called after me.

"Careful?" I questioned.

"Not to let the *furniture* get too wet," he responded with a grin.

"I won't," I promised.

"And don't miss any payments," he called out in final advice. "The bank hates to foreclose, especially if they must charge fraud."

One week later, my '*furniture*' was floating on the Susquehanna River. (Editors Note: Next month the author explains how bank loans for boats have gone "*legit*" — if you know where to go and how to go about it.)

Bait Up

(continued from page 7.)

Aquatic beetle larvae are collected by sweeping a sieve net over the bottoms of quiet pools and ponds or by raking out vegetation and sorting through it. Be careful when handling larger specimens, they bite! It is a good idea to keep the *Dytiscidae* larvae in a separate container because, if you don't, they will immediately attack and eat or maim everything else in the jar. Don't keep them in an aquarium for the same reason, instead store them in a jar in a cold, but not freezing, refrigerator. The colder the better — this retards their metabolism and keeps them from eating each other.

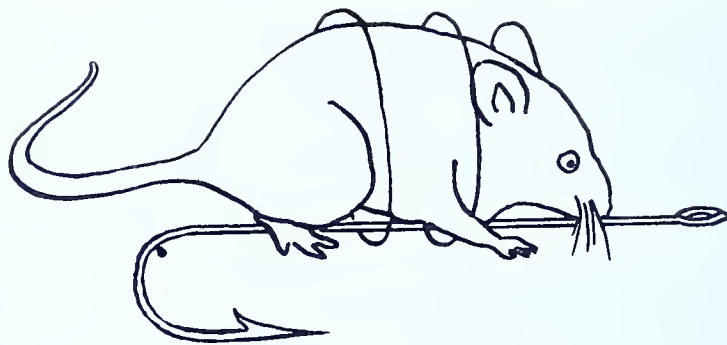
Hook and fish all aquatic beetle larvae exactly as you would hellgrammites. Most of these larvae pupate in the moist earth of stream or pond banks and these pupae, when dug out and fished on a bobber, are excellent bait. Keep the pupae by refrigeration or storage in cool damp earth, moss, or peat moss. Adult beetles can be netted and kept in a jar or covered aquarium, but most of them bite viciously when handled. Hook them through the back between the wings and let them swim around under their own power or drift them on the surface.

MAMMALS

Large gamefish will consume almost anything they can catch. They seem to be especially fond of small mammals unlucky enough to swim past their lair. Many fishermen who specialize in "lunker hunting" will use nothing but live mice.

Virtually any small mammal will work; deer mice, house mice and meadow mice (voles) have been used successfully. Most species can be caught in box traps baited with peanut butter and oatmeal. Set your traps near their runs in grassy meadows and woods. Active runways can be identified by their well-worn appearance and the presence of fresh droppings. In woodlands look for runways under logs and stones.

Most small mammals are extremely prolific and can be raised in a cage or terrarium with a minimum of effort. Give them some leaves and dry grass

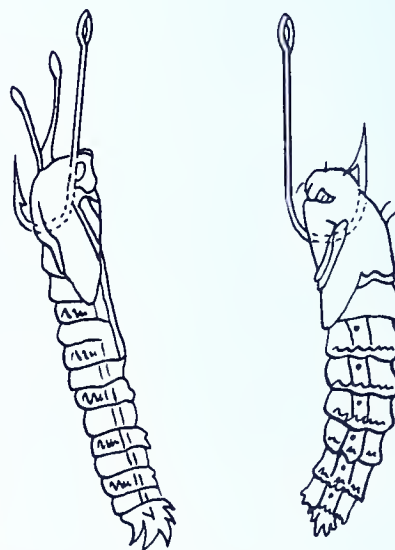
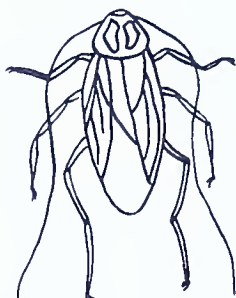
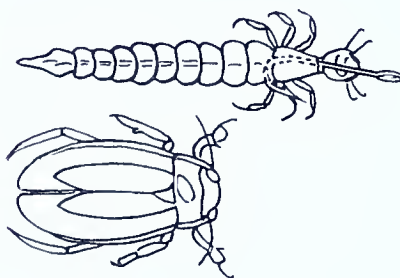


to build a nest and a steady supply of food and water. Many small wild mammals will go into shock and die if handled too much, or too roughly. Always pick them up by the scruff of the neck and then hold them with their belly up. This position tends to calm and relax them, making them easier to handle. I prefer to use tame mice purchased from a pet store. They are used to being handled and have a higher survival rate. When mice are unavailable, small rats, hamsters, and gerbils work just as well.

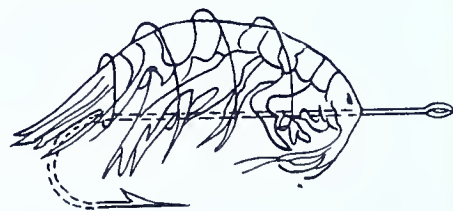
Use a large long shank hook and attach the mouse to it with rubber bands, or solder two fine wires across the hook, and use them to attach the

mouse. Cast the mouse *gently* and let it swim under its own power. When it gets tired, bring it in and put on a fresh one, or let it climb on a log to rest. It is a good idea to carry at least a half-dozen and rotate them, giving each one a good rest between swims. Concentrate your fishing in areas where big fish are known to prowl.

(Editor's note: With this issue, Don Kingery concludes his "Bait Up" series. We trust that the information he has imparted to our readers has been helpful. We have received many letters from both new anglers and experienced expressing their appreciation for his bait-fishing hints. Our thanks to Don for the series.)



Throughout his "Bait Up" series, author Don Kingery has given specific instructions regarding the catching, hooking and general use of natural baits. For the benefit of new subscribers who might have missed early segments, suffice to say, if it swims, crawls or flies, it will certainly catch fish!



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